PENN MANOR HIGH SCHOOL

COURSE SELECTION GUIDE

2022 - 2023

Dear Penn Manor Students and Parents,

Penn Manor High School's goal is to prepare students for life after high school. With the changes that are occurring in our world, it is important that students carefully select challenging classes that are related to their interests, abilities and will enable them to develop necessary skills for the future. Our staff is committed to offering quality classes that will prepare students for their future goals.

In addition to the academic knowledge students need to gain through their coursework, students should develop skills that will enable them to be successful in the 21st Century. These skills are not limited to, but include, critical thinking, effective communication, collaboration across networks, and accessing and analyzing information. For this reason students should make smart decisions when selecting courses.

The full course selection guide provides everyone with a complete description of the offerings of Penn Manor High School. Students and parents should give careful consideration to the requirements for graduation and the criteria that will be used to place students in the appropriate level of classes. It is our desire to provide clear guidelines, quality programs, and rigorous classes that will enable students to achieve the necessary academic and 21st Century skills to succeed in life after high school.

Sincerely,

Baron H. Jones
Principal

All students are required to schedule four credits for each semester. Careful consideration should be given to which courses are selected so that all requirements for graduation are met and students are best prepared to meet their future goals. Every effort will be made to schedule the courses that students select. In the event of insufficient registration or faculty limitations, the administration reserves the right to cancel any course or limit enrollment.

General Graduation Requirements - Total credits needed to graduate: 28
English - 4 credits
Math - 4 credits
Social Studies - 4 credits
Science - 4 credits
Physical Education/Health - 1 credit
Physical Education/Safety Education - 1 credit
Graduation Project requirement

*It is highly recommended to take two or more levels of the same World Language if you are planning to attend a four year college. Students are encouraged to check World Language requirements for colleges of interest.

Students must be enrolled in one or more English and Social Studies course every year. Of the four required Social Studies credits, one credit must be a World History course. Those courses include Eastern World History, Western World History, AP World History, AP Art History. Of the four science credits, one credit must be Biology.

The Graduation Project is a requirement of the Penn Manor High School curriculum. To complete the project, each student will work through a series of interest inventories and interactive lessons that will provide students with the information necessary to create a post-secondary plan. The lessons required for the graduation project are aligned with the Pennsylvania Career and will be completed during the 9th, 10th and 11th grade years. These lessons will have the student explore careers, post-secondary schools and majors along with necessary job skills and will serve as a guide for students along their journey towards graduation. In order to successfully complete the graduation project, a student must complete all required lessons and activities at a proficient level. For more information, please access the high school website under ‘Graduation Project”.

Career & Technology Center Student - Total credits needed to graduate: 28
In order to be considered a full-day CTC student, a student must complete at least 6 credits of vocational training. A student must meet the following requirements before attending the LCCTC for a full-day program:
English - 4 credits (1 earned at CTC)
Math – 3 credits
Social Studies – 3 credits – one credit must be a non-American course
Science – 3 credits – one credit must be Biology
Physical Education/Health – 1 credit
Physical Education/Safety Education – 1 credit

Graduation Project requirement – it is recommended that this project be completed prior to attending CTC full day for the senior year. This project must be completed by the end of the junior year.

Students who attend the Advanced Health Careers program must earn Penn Manor's General Graduation Requirements.

Agriculture Education Student – Total credits needed to graduate: 28
In order to be considered as an Agriculture (Ag) student, a student must complete 11 credits of Agriculture Classes in grades 9 through 12. Substitution courses do not count toward the 11 credit total.
English – 4 credits
Social Studies – 3 credits
Science – 3 credits (1 credit of science through Ag curriculum, one credit must be Biology.)
Math – 3 credits (1 credit of math through Ag curriculum)
Physical Education/Health – 1 credit
Physical Education/Safety Education – 1 credit

Graduation Project requirement

Agriculture courses counted as required academic credits for Ag students:
Science: Biotechnology and Food Science, Vet Science and Honors Vet Science
Math: Please see Agricultural Department Coordinator for math credits.

CREDIT REQUIREMENTS

Students must earn all required credits and a minimum of 28 credits to graduate. Students will remain with their class cohort during their four years of high school. Students who do not meet credit requirements to graduate must recover their credits outside of the school day.

KEYSTONE EXAM REQUIREMENTS TO GRADUATE

In order to graduate from Penn Manor High School, students must demonstrate mastery of the Pennsylvania Academic Standards by attaining proficiency or better on the Keystone Exams for Algebra, Biology, and Literature by the end of their junior year of high school. Exams will be administered at the end of the courses designated with a Keystone Exam symbol in the Course Selection Guide. A student who attains a basic or below basic score on any exam will receive focused remediation in the standards and retest in that exam until a proficient score or better is achieved. In 2018, the Pennsylvania legislature passed Act 158 updating the graduation requirements for all high school students in the state. Students who do not score proficient by the end of their junior year will have alternate pathways to demonstrate proficiency in these areas. More information about Act 158 can be found at the Pennsylvania Department of Education website.

CAREER PREP, COLLEGE PREP, HONORS, and ADVANCED PLACEMENT COURSES

I. Career Prep

Career Prep courses do not have a prefix in the course title. Courses are not NCAA approved. Courses are intended for students who fit one or more of the following criteria:

- Read and write at or below grade level
- Need an extended amount of time to master a subject area, which may lead to being enrolled in a yearlong class
- May attend Lancaster County Career and Technology Center, attend a technological college, or enter the work force after graduation
- Core classes are not NCAA approved

II. College Prep

College Prep courses are designated by the prefix CP in the course title. Courses are intended for students who fit one or more of the following criteria:

- Read and write at or above grade level
- Planning to attend post-secondary education
- Strong academic record and work ethic
- Meet the grade requirement set forth by the departments.
- Core classes are NCAA approved.

III. Honors

Penn Manor High School Honors Program courses are designated by the word Honors in the course title. Courses are accelerated courses intended for students who meet all of the following criteria:

- Success in CP level courses and desire for more rigorous classes
- Self-directed, self-motivated, independent learners
- Meet the grade requirement set forth by the departments.
- Core classes are NCAA approved.

IV. Advanced Placement

Advanced Placement courses are designated by the prefix AP in the course title. Courses are accelerated courses intended for students who meet all of the following criteria:

- Succeed in Honors courses and desire an even more rigorous classes
- Self-directed, self-motivated, independent learners
- Depending on their score on the AP Exam and their post-secondary institutions' requirements, students may earn college credit.
- Meet the grade requirement set forth by the departments.
- To receive AP credit for an Advanced Placement course, students must take the AP exam. If he/she chooses not to take the exam, Honors credit will be awarded for the class.
- For those AP courses that are two credits, students will earn (1) subject credit and one (1) elective credit.
- Core classes are NCAA approved.

CLASS WEIGHTING FOR CALCULATION OF GPA

AP+	AP	Honors	CP and Career
A = 5.5	A = 5	A = 4.5	A = 4
B = 4.5	B = 4	B = 3.5	B = 3
C = 3.5	C = 3	C = 2.5	C = 2
D = 2.5	D = 2	D = 1.5	D = 1

DECILE RANKING POLICY

Penn Manor High School acknowledges the usefulness of a system of computing grade point average (GPA) for secondary school students to inform students, parents, and others of their academic progress. Penn Manor High School utilizes a system of decile ranking based on grade point average for students in grades 9 through 12. Decile ranking (top 10%, 20%, 30%) will be computed to indicate a student's relative academic placement in relation to their peers.

Grade point average is determined by dividing the number of credits into the quality points earned. Extra quality points earned in weighted Honors (+.5) and Advanced Placement (+1) courses will be included in determining GPA.

Penn Manor students who take college level courses with the prior approval of the high school administration shall have grades from these courses included in determining their grade point average. College courses will receive additional weighting. Courses that are 100 level will receive Honors weighting (+.5), courses that are 200 level will receive AP weighting (+1) and courses that are 300 level and above will receive AP+ weighting (+1.5). Students who take courses through a world studies program, with the prior approval of the high school administration, shall have grades included in determining their grade point average.

Grade point average will be used for the purpose of naming the valedictorian and salutatorian. The valedictorian will be awarded to the student with the highest GPA and the greatest number of Advanced Placement credits. The Salutatorian will be the student with the second highest GPA and number of Advanced Placement credits. To be considered for valedictorian and salutatorian honors, a student must attend classes at Penn Manor High School for at least six semesters. A student's grade point average and decile ranking shall be entered on his/her record and all transcripts and shall be subject to the board's policy on release of student records.

PENN MANOR HIGH SCHOOL HONORS PROGRAM

To graduate with Honors designation on diploma a student must earn the following in grades 10-12:

- Five Honors Courses with a minimum grade of B or better in each.
- Four Advanced Placement credits with a minimum grade of B or better in each.
- Three levels of the same World Language in grades 9-12 with a grade of B or better in each. World Language courses taken in grade 9 count toward specific credit totals needed to graduate with Honors.
- All required core courses must be College Prep level or higher.
- Core courses are defined as English, math, social studies, and science.
- Students must maintain an overall, cumulative GPA of 3.75.

OPEN CAMPUS PA

We invite students to review our available online courses, provided via Open Campus PA. This program offers courses that may not be available on-site; it provides flexibility with scheduling; and it gives students the opportunity to experience self-directed learning. Taking an online course through Open Campus PA will also help to prepare students for higher education, as most colleges and universities now include online options in their degree programs and as part of their classroom instruction. Self-motivation and self-direction are vital to a student's success with an online course. If a student enrolls in one or more Open Campus PA courses, as part of their regular course load, a block in the student's schedule will be designated as such and will allow for independent work time to complete the course/s.

Students who would like to take an online course through Open Campus PA will need to request the course/s within Sapphire.

COUNSELING SERVICES

The Penn Manor High School Counseling Department provides a comprehensive counseling program to all students in grades 9 through 12. Academic, career, and personal/social needs are the focus and students have the opportunity to participate in a number of activities. Each counselor is prepared to assist students with the course selection process, explore post-secondary options, and provide academic and individual counseling. Students are assigned to counselors based on their last name. Current counseling information is maintained at https://blogs.pennmanor.net/pmhscounseling/

NCAA FRESHMAN ELIGIBILITY STANDARDS

Students who plan to participate in college athletics at the Division I and II levels must make sure that all NCAA academic requirements are met. The NCAA requires all core courses to be college prep or higher. For information regarding the requirements students should meet with their coach and school counselor. Parents and students are reminded to review the NCAA guidelines carefully as they prepare for course selection. Starting as early as possible. If you qualify for free or reduced lunch you are eligible for a fee waiver to register for the eligibility center.

The next page includes a quick reference guide provided by the NCAA Eligibility Center. For more information go to www.NCAA.org or www.eligibilitycenter.org. Click on resources and view the list of Penn Manor approved courses and the Eligibility Quick Reference Guide.

NCAA Eligibility Center

ONE OPPORTUNITY. LIMITLESS POSSIBILITIES.

If you want to play sports at an NCAA Division I or II school, start by registering for a Certification Account with the NCAA Eligibility Center at **eligibilitycenter.org**. If you want to play Division III sports or you aren't sure where you want to compete, start by creating a Profile Page at **eligibilitycenter.org**.

ACADEMIC REQUIREMENTS

To play sports at a Division I or II school, you must graduate from high school, complete 16 NCAA-approved core courses, earn a minimum GPA, and earn an ACT or SAT score that matches your core-course GPA.

CORE COURSES

Visit eligibilitycenter.org/courselist for a full list of your high school's approved core courses.
Complete 16 core courses in the following areas:

DIVISION I

Complete 10 NCAA core courses, including seven in English, math or natural/physical science, before your seventh semester.

ENGLISH	NATURAL/ PHYSICAL SCIENCE (including one year of lab science, if offered)	MATH (Algebra I or higher)	SOCIAL SCIENCE	ADDITIONAL (English, math or natural/physical science)	ADDITIONAL (English, math, natural/physical science, social science, foreign language, comparative religion or philosophy)
4 years	2 years	3 years	2 years	1 year	4 years

DIVISION II

ENGLISH	NATURAL/ PHYSICAL SCIENCE (including one year of lab science, if offered)	MATH (Algebra I or higher)	SOCIAL SCIENCE	ADDITIONAL (English, math or natural/physical science)	ADDITIONAL (English, math, natural/physical science, social science, foreign language, comparative religion or philosophy)
3 years	2 years	2 years	2 years	3 years	4 years

GRADE-POINT AVERAGE

The NCAA Eligibility Center calculates your grade-point average (GPA) based on the grades you earn in NCAA-approved core courses.

- DI requires a minimum 2.3 GPA
- DII requires a minimum 2.2 GPA

SLIDING SCALE

Divisions I and II use sliding scales to match test scores and GPAs to determine eligibility. The sliding scale balances your test score with your GPA. If you have a low test score, you need a higher GPA to be eligible. Find more information about sliding scales at ncaa.org/playcollegesports.

TEST SCORES

Take the ACT or SAT as many times as you want before you enroll full time in college, but remember to list the NCAA Eligibility Center (code **9999**) as a score recipient whenever you register to take a test. If you take a test more than once, send us all your scores and we will choose the best scores from each test section to create your sum score. We accept official scores only from the ACT or SAT, and won't use scores shown on your high school transcript. Remember to apply the College Board concordance table for SAT tests taken in March 2016 and after.

HIGH SCHOOL TIMELINE

GRADE 9

Plan

- Start planning now! Take the right courses and earn the best grades you can.
- Ask your counselor for a list of your high school's NCAA core courses to make sure you take the right classes. Or, find your high school's list of NCAA core courses at **eligibilitycenter.org/courselist**.

GRADE 10

Register

- Register for a Certification Account or Profile Page with the NCAA Eligibility Center at **eligibilitycenter.org**.
- If you fall behind on courses, don't take shortcuts to catch up. Ask your counselor for help with finding approved courses or programs you can take.

GRADE 11

Study

- Check with your counselor to make sure you are on track to graduate on time.
- Take the ACT or SAT, and make sure we get your scores by using code **9999**.
- At the end of the year, ask your counselor to upload your official transcript.

GRADE 12

Graduate

- Take the ACT or SAT again, if necessary, and make sure we get your scores by using code **9999**.
- Request your final amateurism certification after April 1.
- After you graduate, ask your counselor to upload your final official transcript with proof of graduation.

Core Courses

This simple formula will help you meet Division I and II core-course requirements.

4x4=16

+ 4 English courses (one per year)

+ 4 math courses (one per year)

+ 4 science courses (one per year)

+ 4 social science courses (one per year)

= 16 NCAA CORE COURSES

For more information:

ncaa.org/playcollegesports
eligibilitycenter.org

Search Frequently Asked Questions

ncaa.org/studentfaq

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COURSE CHANGES

Students will be able to access their schedules on Sapphire Community Portal at a designated time during the summer. The days and times when students are able to make changes to their schedules will be announced. To make a schedule change, a student must meet with a counselor on one of the designated days. No changes will be made after this time period ends.

The following parameters must be met in order for a scheduling change to occur:

- Student must have a valid educational reason for the schedule change.
- There must be an open seat available for the student in the new course.
- A counselor and/or administrator must approve the change.

If there are questions about schedules or schedule change days, students should see the course selection timeline letter on the high school website or contact their counselor.

COURSE RECOMMENDATIONS Teachers in the core subject areas, (English, math, science, and social studies,) will recommend student academic levels for next year in these courses. When students log-on to their Sapphire Community Portal accounts to request courses, the teacher recommendations will already be pre-selected for students. If students have questions about their recommendations, they should speak with the teacher that made the recommendation or their counselor.

PENN MANOR HIGH SCHOOL GRADUATION PROJECT

The Graduation Project is a requirement of the Penn Manor High School curriculum. To complete the project each student will develop a cumulative career exploration project that will provide students with a post-secondary plan. The project is aligned with the Pennsylvania Career and Work Standards and the Lancaster County Career Pathways. The project will serve as a guide for students along their journey towards graduation. Components of a student's project will include interest inventories, career exploration, and career plan development. In order to successfully complete the project, a student must receive a rating of Proficient or Advanced. For more information, please access the high school website under "Graduation Project".

For more information, please access the high school website under "Graduation Project". The staff at Penn Manor High School will serve as a resource to students as they develop their career exploration project.

WEIGHTED EXEMPTION POLICY

Penn Manor High School recognizes the importance that a student's Grade Point Average (GPA) may play in the college application process. In an effort to help students maintain their GPA while also encouraging them to take classes of interest, the school has developed a Weighted Exemption Administrative Regulation to allow students in their junior and senior year of high school to select classes that will not be factored into their Grade Point Average (GPA). Students who apply for a Weighted Exemption will still have all of the classes listed on a student's academic transcript. Please access the high school website for weighted exemption policy form. The following procedures and guidelines have been developed for students who elect to apply for a Weighted Exemption:

- A student will be permitted a total of three (3) exemptions throughout his/her high school career. He or she may use one (1) in his or her junior year and 1 per semester in his or her senior year.
- Internship or Service Learning will count as an exemption, meaning that a student does not have to apply for a Weighted Exemption during a semester in which he or she is scheduled for either of these classes.
- Each subject area department will deem which classes are eligible for exemption.
- A Weighted Exemption cannot be applied to any class that is required for graduation.
- Students must apply for an exemption within the first five school days of the semester (or their enrollment at the school for new students). Exemptions will not be honored if the request is received after that date.
- Once an exemption is applied for, a student may not withdraw that request. All requests are final.

  Students must complete the Weighted Exemption form to be eligible for the policy.

NON-DISCRIMINATION POLICY

The Penn Manor School District, an equal opportunity employer, will not discriminate in employment, education programs or activities, based on race, sex, handicap or because a person is a disabled veteran or a veteran of the Vietnam era. This policy of nondiscrimination extends to all other legally protected classifications. Publication of this policy in this document is in accordance with state and federal laws including Title IX of the Educational Amendments of 1972 and Sections 503 and 504 of the Rehabilitation Act of 1973. For information regarding civil rights or grievance procedures, contact Dr. Michael G. Leichliter, Section 504 Coordinator, at Penn Manor Administration Office (872-9500).

DEPARTMENT COURSE OFFERINGS AND SEQUENCE

Penn Manor Agriculture Scope and Sequence

To be considered an Ag Student, students MUST:

- Complete Ag Student Status Survey
- Get PDE 408 letter signed by student and parent and return to department coordinator
- Have an agricultural related career goal
- Be enrolled in TWO Ag classes per school year (SAE Counts)
- Concentrate in (take 6 or more credits) or complete (take 11 courses) one of the five ag majors
- Take end of program competency (NOCTI) test (no test in Animal Science)

Agriculture Students who complete all 11 credits in a major are waived one credit of math, science, and social studies their senior year.

Agriculture Major Descriptions

Agriculture Production Major

Students seeking the Agriculture production major will be prepared to enter fields in and supporting production agriculture. Students will focus on both Agriculture Science and Agricultural Mechanics Concepts. Students who complete this major will take the Agriculture Production NOCTI exam and receive a certificate of completion if rated competent or advanced.

CERTIFICATIONS: PA Private Pesticide Applicators License (must pass test)
Youth for Quality Care of Animals (Yearly course must be completed)

REQUIRED COURSES	MUST CHOOSE 3 OR MORE FROM:
Introduction to Ag, Food, & Natural Resources	SAE 1 (Outside of School)
Intro to Ag Mechanics	SAE 2 (Outside of School)
Engines 1	SAE 3 (Outside of School)
Animal Science 1	SAE 4 (Outside of School)
Plant Science 1	Welding 1
Agribusiness and Leadership 1	Welding 2
Biotechnology and Food Science (Odd Years)	Engines 2(Even Years)
Plant Science 2 (Even Years)	Construction
	Ag Equipment (Odd Years)
	CP/Honors Vet Science 1
	CP/Honors Vet Science 2 (Even Years)
	Ag Work Study (Seniors Only)
	Wildlife and Natural Resources
	Floriculture and Landscape (Odd Years)

Animal Science Major

Students who complete the Animal Science major will be prepared for careers involving large and small animals or to major in animal sciences in college. Students who complete this program will be awarded a certificate of completion if rated competent or advanced by the Penn Manor Agriculture staff.

CERTIFICATIONS: Youth for Quality Care of Animals (Yearly course must be completed)

REQUIRED COURSES	MUST CHOOSE 4 OR MORE FROM:
CASE Introduction to Agriculture Food, and Natural Resources	SAE 1 (Outside of School)
Animal Science 1	SAE 2 (Outside of School)
CP/Honors Veterinary Science 1	SAE 3 (Outside of School)
CP/Honors Veterinary Science 2 (Even Years)	SAE 4 (Outside of School)
Agribusiness and Leadership 1	Wildlife and Natural Resources
Biotechnology and Food Science (Odd Years)	Ag Work Study (Seniors Only)
Plant Science 1	
Plant Science 2 (Even Years)	

General Agriculture Major

Students who complete the General Agriculture Major will be prepared for a wide variety of careers or further education within the field of Agriculture. Students may choose to specialize in their area of interest through selecting electives that fit their interest. Students who complete this major will take either the Agriculture Production or Agriculture Mechanics NOCTI depending on their specialization and receive a certificate of completion if rated competent or advanced.

CERTIFICATIONS: PA Private Pesticide Applicators License (must pass test)
Youth for Quality Care of Animals (Yearly course must be completed)

REQUIRED COURSES	MUST CHOOSE 3 OR MORE FROM:
CASE Introduction to Agriculture Food, and Natural Resources	SAE 1 (Outside of School)
Introduction to Ag Mechanics	SAE 2 (Outside of School)
Animal Science 1	SAE 3 (Outside of School)
Plant Science 1	SAE 4 (Outside of School)
Agribusiness and Leadership 1	Welding 1
Plant Science 2 (Even Year)	Welding 2
Biotechnology and Food Science (Odd Year)	Engines 1
Wildlife and Natural Resources	Engines 2
	Construction
	Ag Equipment (Odd Year)
	CP/Honors Vet Science 1
	CP/Honors Vet Science 2
	Ag Work Study (Seniors Only)
	Floriculture and Landscape Design (Odd Year)

Agriculture Mechanics Major

Students who complete the Agriculture Mechanics Major will be prepared for careers or further education in welding, construction and equipment sales, service, and operation. Students who complete the program will take the Agriculture Mechanics NOCTI test and receive a certificate of completion if rated competent or advanced on the exam.

REQUIRED COURSES	MUST CHOOSE 3 OR MORE FROM:
Introduction to Ag Mechanics	SAE 1 (Outside of School)
Engines 1	SAE 2 (Outside of School)
Engines 2 (Even Year)	SAE 3 (Outside of School)
Welding 1	SAE 4 (Outside of School)
Welding 2	Introduction to Agriculture, Food, and Natural Resources
Construction	Ag Work Study (Seniors Only)
Agribusiness and Leadership 1	
Ag Equipment (Odd Year)	

Applied Horticulture Major—11 Credits Required

Students who complete the Applied Horticulture major prepare themselves for careers in the horticulture industry including greenhouse/nursery, landscaping, and floriculture. Students who complete the program will take the Applied Horticulture NOCTI test and receive a certificate of completion if rated competent or advanced on the exam.

CERTIFICATIONS: PA Private Pesticide Applicators License (must pass test)
Pennsylvania Certified Horticulturist Associate (must pass test)

REQUIRED COURSES	MUST CHOOSE 5 OR MORE FROM:
CASE Intro to Agriculture, Food, and Natural Resources	SAE 1 (Outside of School)
Plant Science 1	SAE 2 (Outside of School)
Plant Science 2 (Even Year)	SAE 3 (Outside of School)
Floriculture and Landscape Design (Odd year)	SAE 4 (Outside of School)
Agribusiness and Leadership 1	Wildlife and Natural Resources
Intro to Ag Mechanics	Biotech and Food Science
	Engines 1
	Ag Work Study (Seniors Only)

Careers in…..

Ag Production	Animal Science	General Agriculture	Ag Mechanics	Applied Horticulture
Farm Manager/Consultant	Animal Breeding/Genetics	Business Manager/ Consultant	Equipment Operator	Greenhouse/ Nursery Production
Fertilizer/Chemical Application and Sales	Veterinarian/Vet Assistant	Government Agency Worker	Equipment/Parts Sales	Floral Design
Inspection and Grading	Animal Feed Specialist/Nutritionist	Agriculture and Extension Education	Equipment Service and Repair	Landscaping
Market and Dairy animal Production	Animal Control Officer	Wildlife and Fisheries Sciences	Electrician	Extension and Education
Crop Production	Farm/Ranch Hand	Agriculture Communications	Welder	Plant Research
Fruit/Vegetable Production and Care		Agriculture Economics	Construction Worker	Forestry/Arborist
Animal Nutritionist		Soil Scientist	Agricultural Engineering	
Groundskeeper/Landscaper		Conservation Specialist		
Greenhouse Manager/Worker		Food Scientist		
Farm/Ranch Hand		Chemical/Biological Engineering		
Agronomist				

AGRICULTURE EDUCATION COURSE DESCRIPTIONS

Students who elect courses in the Agriculture Education Department are prepared for a future in employment immediately after high school and/or post-secondary education programs. Agriculture teachers are very instrumental in helping students with job placement and researching scholarship opportunities.

Students who are enrolled in one Agriculture Education course throughout the school year are invited to be involved in the Manor FFA Chapter. Agriculture Science at Penn Manor prepares students for careers by teaching Agriculture Science principles, small and large animal health and management, food science, plant science, leadership, problem solving, and communication skills. If students should have any questions about the courses that best match their career plans, they should see any Agriculture Education teacher.

Depending on class enrollment, the agriculture classes will follow the every other year class rotation below:

Even Year	Odd Year
Intro to AFNR	Intro to AFNR
Animal Science	Animal Science
Plant Science I	Plant Science I
Agribusiness and Leadership	Agribusiness and Leadership
Veterinary Science I	Veterinary Science I
Veterinary Science II	**Floriculture and Landscape Design**
Plant Science II	**Biotech and Food Science**
Wildlife and Natural Resources	Wildlife and Natural Resources
Intro to Ag Mechanics	Intro to Ag Mechanics
Engines I	Engines I
Welding I	Welding I
Construction	Construction
Welding II	Welding II
Engines II	**Ag Equipment**
SAE	SAE
Work Study	Work Study

AGRICULTURE, FOOD, AND NATURAL RESOURCE SCIENCES

Introduction to Agriculture, Food and Natural Resources
251
Grade 9, 10, 11, 12
The first class in the series of agriculture science classes, the major purpose of the Introduction to Agriculture, Food, and Natural Resources (AFNR) course is to introduce students to the world of agriculture, and the pathways they may pursue in that field. Students participating in the Introduction to Agriculture, Food, and Natural Resources course will experience exciting

"hands-on" activities, projects, and problems. Student experiences will involve the study of communication, the science of agriculture, plants, animals, natural resources, and agricultural technology. While surveying the opportunities available in agriculture and natural resources, students will learn to solve problems, conduct research, analyze data, work in teams, and take responsibility for their work, actions, and learning. In addition, students will understand specific connections between their lessons and Supervised Agricultural Experience and FFA components that are important for the development of an informed agricultural education student. Students will investigate, experiment, and learn about documenting a project, solving problems, and communicating their solutions to their peers and members of the professional community.
Additional information: Lab Fee - $10

Animal Science I
252
Grade 9, 10, 11, 12
Prerequisite: A minimum grade of a B in Intro to AFNR or department approval.
Animal Science I is designed for students who are preparing for a future in the animal, veterinary, biomedical or zoological industries. Students will learn an overview of large animal industries as well as trends within the small animal populations. Breed identification of large and small animals will be required, as well as handling and daily care. Proper feeding, management and facility care will be covered for both small and large animals. Physiology and anatomy of the musculoskeletal, digestive and reproductive systems will be covered. An introduction to the food industry and animal products will be covered, as well as methods of food production, handling and safety. Topics such as careers, leadership, communication, record keeping and FFA will be interwoven throughout all units of the class. Students will be required to keep a daily logbook of class activities.
Additional information: Lab Fee - $10

CP Veterinary Science I
272
Grade 10, 11, 12
Prerequisite: Minimum Grade of a B in Animal Science and Biology, or department approval
This course is designed to give students a foundation in the basic knowledge needed to be successful in a veterinary science career. Areas of study include animal systems including: animal tissues, musculoskeletal, digestive, reproductive, and respiratory. Students will be expected to learn veterinary terminology in addition to epidemiology of disease, zoonotic diagnosis and veterinary technician skills. Basic veterinary science practices will be studied, including: cause, diagnosis, treatments and prevention of animal health problems. Supervised Agriculture Experience (SAE), record keeping and FFA are included. Computers will be used and calculators are needed.
Additional information: Lab Fee - $15.This course may count as a science credit for any student.

Honors Veterinary Science I
266
Grade 10, 11, 12
Prerequisite: Minimum grade of a B in Animal Science and Biology or Department Approval
This course is designed to give students a foundation in the basic knowledge needed to be successful in a veterinary science career. Areas of study include animal systems including: animal tissues, musculoskeletal, digestive, reproductive, and respiratory. Students will be expected to learn veterinary terminology in addition to epidemiology of disease, zoonotic diagnosis and veterinary technician skills. Basic veterinary science practices will be studied, including: cause, diagnosis, treatments and prevention of animal health problems. Students earning an honors credit will be expected to perform all the steps in designing and performing an experiment/study and then writing a lab report summarizing the information. Students will have to research a veterinary topic of their choice and present their findings through paper and poster. Supervised Agriculture Experience (SAE), record keeping and FFA are included. Computers will be used; calculators are needed.
Additional information: Lab Fee - $15.This course may count as a science credit for any student.

CP Veterinary Science II
272
Grade 11, 12
Prerequisite: Minimum Grade of a B in CP Veterinary Science I – no exceptions
This course is designed for students who are planning to enter the veterinary field and who wants to further their study from Veterinary Science I. Students will continue their study from Veterinary Science I by focusing on the circulatory, renal nervous, endocrine and immune systems. Clinical, surgical, and office management practices will be studied in addition to nutrition, sanitation and terminology related to the industry. Supervised Agriculture Experience (SAE), record keeping and FFA are included. Computers will be used: calculators are needed.
Additional information: Lab Fee - $15. This course may count as a science credit for any student.

Honors Veterinary Science II
272
Grade 11, 12
Prerequisite: Minimum Grade of a B in Veterinary Science I – no exceptions
This course is designed for students who are planning to enter the veterinary field and who want to further their study from Veterinary Science I. Students will continue their study from Veterinary Science I by focusing on the circulatory, renal, nervous, and endocrine and immune systems. Clinical, surgical, and office management practices will be studied in addition nutrition, sanitation, and terminology related to the industry. **Students earning an honors credit will be expected to perform all the steps in designing and performing an experiments/study and then writing a lab report summarizing the information. Students will have to research a veterinary topic of their choice and present their findings through paper and poster.** Supervised Agriculture Experience (SAE), record keeping and FFA are included. Computers will be used: calculators are needed.
Additional information: Lab Fee - $15. This course may count as a science credit for any student.

Plant Science I
278
Grade 9, 10, 11, 12
Prerequisite: A minimum grade of a B in Intro to AFNR or department approval
Plant Science 1 will expose students to the world of agriculture, plant science, and career options. Students will have experiences in various plant science concepts through exciting "hands-on" activities, projects, and problems. Student experiences will include the study of plant anatomy and physiology, classification, and the fundamentals of production and harvesting. Students will learn how to apply scientific knowledge and skills to use plants effectively for agricultural and horticultural production. Students will discover the value of plant production and its impact on the individual, the local, and the global economy. Lessons throughout the course will provide an overview of the field of agricultural science with a foundation in plant science. These lessons include working in teams and exploring hands-on projects. Students will work on major projects and problems similar to those that plant science specialists, such as horticulturalists, agronomists, greenhouse and nursery managers, and plant research specialists, face in their respective careers.
Additional information: Lab Fee - $10

Plant Science II
253
Grade 10, 11, 12
Prerequisite: A minimum grade of a B in Plant Science I or department approval
This class goes in depth on the study of plant production and related disciplines. Students will study IPM (Integrated Pest Management) and earn their private pesticide applicators license. Other units will involve crop and pest identification, land use and management, nutrient management, cropping systems, plant maintenance and plant physiology using hands on activities, projects, and problems as well as the Greenhouse Lab. FFA and Supervised Agricultural Experience are valuable parts of the course. Students will keep a logbook of daily class activities and skills learned.
Additional information: Lab Fee - $10

Floriculture and Landscape Design
273
Grade 10, 11, 12
Prerequisite: A minimum grade of a B in Plant Science I or department approval
Plant and Landscape Design is a hands-on course open to anyone who has an interest in the horticulture and floral design industry. Students will learn skills essential to be successful in careers involving floral design, event planning, landscape design, landscape architecture, plant propagation, lawn maintenance, and business management. Students will be required to identify commonly used annuals and perennials in landscape design; as well as commercial and homegrown varieties of flowers used for special events in floral design. Students will learn the basics of floral design in addition to event preparation, marketing and implementation. Students will be required to design to scale using various landscape design techniques. Students will be able to take home many of the plants and designs that they have worked with. Units on careers, leadership, communication skills, record keeping and FFA are included. Students will keep a logbook of daily class activities and skills learned.
Additional information: Lab fee - $20

Wildlife and Natural Resources Management
267
Grade 9, 10, 11, 12
Prerequisite: A minimum grade of B in Introduction to AFNR or department approval
North America is a part of the world where wildlife populations are considered to a valued treasure. A concern for the land, its resources, and its continuing variability is important to everyone. This course will focus on several topics within this field including forestry, aquatics, wildlife, and natural resource sustainability and will allow learners to improve identification skills of trees, wildlife, and wildlife signs found in the North Eastern United States region. Dendrology or the study of trees will include tree species identification, forest structure, pests, and management. Aquatics will include watersheds, macro invertebrate identification, stream study, and Pennsylvania fish. Habitats, wildlife signs, identifying PA mammals and birds, and population will be studied under wildlife. This is a project based class allowing one to explore the Pennsylvania natural environment through labs, activities and problems. One should be prepared to explore the outside environment. A logbook will be kept daily on class activities.
Additional information: Lab fee- $10

Biotechnology and Food Science
254
Grade 10, 11, 12
Prerequisite: A minimum grade of a B in Intro to AFNR or department approval
Careers in Biotechnology and Food Science areas of agriculture are growing. This course projects concepts in biotechnology and food science as a tool for the enhancement of agricultural science. As populations explode into a finite world and land mass, agriculture must uncover new and improved ways to meet these growing demands for efficiency. Studies in this course will include genetic engineering, recombinant DNA technology, embryo transfer, tissue culture, biofuels and other related topics from several cutting edge frontiers. Exploration in the concepts of food processing and science will also be explored using hands on activities, projects and problems. This course will focus on both theory and hands-on applications to help students realize the direction agriculture is demanding from its many constituents. Units on leadership, communication skills, Supervised Agriculture Experience (SAE), record keeping and FFA are included. Students will keep a logbook of daily class activities and skills learned. Safety glasses are required.
Additional information: Lab fee - $20. This course may count as a science credit for any student.

AGRICULTURAL MECHANICS AND TECHNOLOGY

Introduction to Agriculture Mechanics
261
Grade 9, 10, 11, 12
This course will provide an overview of career possibilities and skills required in agriculture mechanics through technical theory and hands on training. Introduction to Agriculture Mechanics is the foundation for all other Agriculture Mechanics courses. Units include: safety, introduction to small engine maintenance and repair, basic electrical wiring, plumbing, woodworking, arc welding and basic metalworking. Units on career exploration, leadership, communication skills,

record keeping and FFA are included in this introductory agriculture class. A daily logbook will be kept recording skills mastered.
Additional information: Lab fee - $20. Leather work boots, long cotton pants (blue jeans) and safety glasses are needed. Safety glasses will be provided from the lab fee. Work boots and jeans required.

Welding I
262
Grade 9, 10, 11, 12
Prerequisite: Minimum grade of a B in Introduction to Agriculture Mechanics
This course lays the foundation for a bright future in welding and metalworking building on skills learned in Introduction to Agriculture Mechanics. Units include: safety, tools, equipment, weld symbols, project plans, welding math, shielded metal arc welding, gas metal arc welding, and oxyacetylene. The focus of the metalworking will be on flat welds, testing welds, and basic cuts. Projects incorporating metalworking skills will be an important part of the coursework. Units on career exploration, leadership, communication skills, record keeping and FFA are included in this agriculture class.
Additional information: Lab fee - $20. Leather work boots, long cotton pants (blue jeans) and safety glasses are needed

Welding II
263
Grade 10, 11, 12
Prerequisite: Minimum grade of a B in Welding I
This course prepares students for a bright future in welding and metalworking, building on skills learned in Welding I. The focus of the metalworking will be on out-of-position welds, pipe welds, nonferrous metals, TIG welding, metal bending, and other special topics. Class fabrication projects will incorporate the use of reading plans and manufacturing environment. Units on career exploration, leadership, communication skills, record keeping and FFA are included in this agriculture class.
Additional information: Lab fee - $20. Leather work boots, long cotton pants (blue jeans) and safety glasses are needed.

Engines I
264
Grade 9, 10, 11, 12
Prerequisite: Minimum grade of a B in Introduction to Agriculture Mechanics
This foundational course prepares students for careers with engines. The course will focus on single cylinder 4-cycle and 2-cycle engine theory, maintenance, troubleshooting, and repair. Students will use their own single cylinder 4-cycle engine, like an old lawn mower and single cylinder 2-cycle engine, like an old weed eater. Students must pay for all parts ordered. Units on career exploration, leadership, communication skills, record keeping and FFA are included in this agriculture class.
Additional information: Lab fee - $20. Leather work boots, long cotton pants (blue jeans) and safety glasses are needed

Engines II (Offered in 2019-2020)
268
Grade 10, 11, 12
Prerequisite: Minimum grade of a B in Engines I
This advanced engines course will focus on multi cylinder gasoline and diesel engine theory, maintenance, troubleshooting, electrical systems and repair. This course will prepare students to become equipment technicians through the Briggs and Stratton and Stihl technical certification. Students will have the opportunity to repair/overhaul their own multi cylinder engine during the laboratory time. Units on career exploration, leadership, communication skills, record keeping and FFA are included in this agriculture class.
Additional information: Lab fee - $20. Leather work boots, long cotton pants (blue jeans) and safety glasses are needed

Construction
269
Grade 9, 10, 11, 12
Prerequisite: Minimum grade of a B in Introduction to Agriculture Mechanics
This course will prepare students for careers in the construction industry. Units will include: building layout, surveying, framing, rafter layout, masonry, pavers, roofing, electrical, and plumbing. Basic and advanced construction projects will be an important part of the coursework. Units on career exploration, leadership, communication skills, record keeping and FFA are included in this agriculture class.
Additional information: Lab fee - $20. Leather work boots, long cotton pants (blue jeans) and safety glasses are needed.

Agriculture Equipment
270
Grade 10, 11, 12
Offered in odd number years
Prerequisite: Minimum grade of a B in Engines I and Welding I
This course is a culminating experience for students completing Engines I and Welding I. Completion of Intro to AFNR is recommended. Students will use metalworking and engines skills and make operational and management decisions with agricultural equipment. The focus will be on current agriculture equipment, uses, technology and operation. Students will complete assigned and independent projects. Units on career exploration, leadership, communication skills, record keeping and FFA are included in this agriculture class.
Additional information: Lab fee - $20. Leather work boots, long cotton pants (blue jeans) and safety glasses are needed.

AGRIBUSINESS, CAREERS, AND 21ST CENTURY SKILLS

Agribusiness and Leadership
271
Grade 9, 10, 11, 12
Prerequisite: A minimum grade of a B in Intro to AFNR, Intro to Ag Mechanics, or department approval
Agribusiness is offered to agriculture students who are considering operating their own business. This class will prepare you with the basic principles required to plan, start, and operate your own business. Units covered include economics, business types, managing a small business, basic computer programs used in business, recordkeeping, and communication. FFA is an integral part of all agriculture classes and will be included in the course of study. Students in agribusiness manage the Manor FFA fruit sale as an example of small business. Students may elect Agribusiness more than once with a minimum grade of "B" in prior Agribusiness classes AND department approval. The curriculum will consist of advanced study of business principles. Students will keep a logbook of daily class activities and skills learned.

Agriculture Work Study/Senior Supervised Agriculture Experience (SAE)
274
Grade 12
Prerequisite: Department approval
The Agriculture Work Study program is for seniors who are planning for a career in the field of agriculture. Through the Agriculture Work Study program students will spend time in their chosen field of work. Students enrolled in the fourth year of Agriculture courses are eligible for this program and must have department approval. Students must have maintained a "B" or better grade in all agriculture education classes. Students interested in the Ag Work Study course will meet with the teacher prior to electing this course to obtain more information. Weekly time sheets will be submitted. This course may be selected both semesters, a grade of A is required in the fall semester in order to continue in the spring semester. To be eligible for this opportunity, students must be enrolled in one other course in the Agriculture department during the current school year.
Additional information: To enroll in this course, the senior project will be completed by June 1 of their junior year.

Supervised Agricultural Experience 2021 - 2022
275
Grade 9, 10, 11, 12
Prerequisite: Department approval
Students will have the opportunity to receive one credit per year for work done outside of school in agriscience research, placement, and agribusiness or production areas. A minimum of 120 hours is required to meet the basic time requirement and a department approved SAE record book will be kept for the SAE project. To be eligible for this opportunity, students must be enrolled in one other course in the Agriculture department during the current school year.
Additional information: This course will be assigned to a student's schedule by the Agriculture teachers.

APPLIED ENGINEERING AND TECHNOLOGY COURSE OFFERINGS AND SEQUENCES

The flowchart below lists the standard progression of courses within the Applied Engineering and Technology Department. Students should review the course descriptions to determine which courses are right for their goals, grade level, and grades in previous courses. Students should make sure they meet the prerequisites, listed in the course descriptions, for the courses they want and that they obtain any teacher recommendations needed.

Student placement in higher-level Applied Engineering and Technology classes will be based on the following criteria, unless specifically stated in the course description:

- Successful completion of an introductory class or previous level class with a grade of 70% or higher.
- Determining grade will not include grading categories that do not reflect assessment, such as homework or extra credit.
- Performance on local assessment, such as midterms and final exams.
- Participation in class activities
- Teacher recommendation

Students who are interested in Applied Science - Physics and Technology should request this course through the Science Department.

Grade 9 Experiencing Technology
Honors Engineering Principles
Grade 9 Second Semester (for students who took 9th Grade Experiencing Tech in the fall) & Grade 10, 11, & 12
Engineering Design & Drafting I / Honors Engineering Design & Drafting I
Engineering Design & Drafting II
Honors Seminar of Engineering
Honors Architectural Design
Product Design
Woodworking Technology / Honors Woodworking Technology
Honors Woodworking Technology
Advanced Materials Technology
Applied Science – Physics & Technology
Computer Animation
Electronics, Robotics & Prototyping I
Electronics, Robotics & Prototyping II
Electronics, Robotics & Prototyping III
AP Computer Science Principles

Special Note: 9th grade students must take 9th Grade Experiencing Technology or Honors Seminar of Engineering in the fall semester to take another Applied Engineering course in the spring

semester. After 9th grade, this is not a requirement for 10th, 11th and 12th grade students to take more Applied Engineering classes.

Open Campus Classes
Open Campus course descriptions can be found in Appendix A of the Course Selection Guide.

APPLIED ENGINEERING AND TECHNOLOGY COURSE DESCRIPTIONS

Student enrollment in Applied Engineering and Technology Education classes will be based on the following criteria, unless specifically stated in the course description:

- Successful completion of an introductory class or previous level class with a grade of 70%.
- Determining grade will not include grading categories that do not reflect assessment, such as homework or extra credit.
- Performance on local assessments, such as midterms, performance evaluations and final exams.
- Participation in class activities
- Teacher recommendation
- Ninth graders interested in taking courses other than the 9th Grade Experiencing Technology must obtain prior approval from the course instructor.

CAREER PATHS IN APPLIED ENGINEERING AND TECHNOLOGY

Courses that would be beneficial to have in the mentioned careers

Engineer (Manufacturing, Mechanical, Electrical, Chemical, etc.) • 9th Grade Experiencing Technology • Engineering Design & Drafting I • Engineering Design & Drafting II • Product Design • Applied Science – Physics and Technology • Honors STEM Design • Electronics, Robotics & Prototyping I • Honors Seminar of Engineering • AP Computer Science Principles • Honors Architectural Design	**Manufacturing, Production, Construction (CNC Operator, Machine Operator/Supervisor, Machinist)** • 9th Grade Experiencing Technology • Product Design • Woodworking Technology / Honors • Advanced Materials Technology • Electronics, Robotics & Prototyping I • Electronics, Robotics & Prototyping II
Drafting (Architect, CAD Designer, Drafter Designer) • 9th Grade Experiencing Technology • Engineering Design & Drafting I • Engineering Design & Drafting II • Electronics, Robotics & Prototyping I • Honors Architectural Design	**Visual Communications (Animation, Web Design, Computer Technology, Video Game Design, etc.)** • 9th Grade Experiencing Technology • Engineering Design & Drafting I & II • Computer Animation • Open Campus Video Game Design

Computer Science • AP Computer Science Principles • Open Campus Video Game Design • Open Campus Web Development • Computer Science: Creating and Making • Computer Science: Communicating and Connecting	• AP Computer Science Principles • Open Campus Web Development • Honors Architectural Design
Electronics/Robotics **(Electronics Technician, Electronic Repair, etc.)** • 9th Grade Experiencing Technology • Engineering Design & Drafting I • Electronics, Robotics & Prototyping I • Electronics, Robotics & Prototyping II • AP Computer Science Principles	**All Technicians** **(Repair, Installation, Industrial, Automotive, HVAC, etc.)** • 9th Grade Experiencing Technology • Product Design • Applied Science-Physics & Technology • Electronics, Robotics & Prototyping I • Electronics, Robotics & Prototyping II

9th Grade Experiencing Technology
710
Grade 9
Technology is everywhere! In this survey course, students experience Design Drafting (latest version of AutoCAD), Electronics, Computer Science, Computer Animation (computer graphics), and Materials Production (woodworking). In one semester students will experience multiple high school teachers and their specialized courses. As students rotate through the sections of the 9th Grade Experiencing Technology course, they will create a wide variety of projects and develop a broad technological knowledge base. This is a STEM focused course.
Additional information: A $25 lab fee will be charged to offset the cost of materials. Students completing this course in the fall may take a 1st level Applied Technology course in the spring.

Applied Science – Physics & Technology
110
Grades: 11, 12
This one semester course is designed with **STEM** (Science, Technology, Engineering, and Mathematics) related concepts and principles that allow students to receive one science credit with a PBL (Project Base Learning) environment. This course is a study of the concepts of physics as they relate to things and events that are familiar in the everyday environment. This course is recommended for students who have an interest in the "real-world" science of physics, but do not have a strong aptitude in math. An Applied Engineering & Technology instructor will teach this course. The course will include a heavy project component. Students will have an opportunity to work with Engineering Design briefs and explore solutions to engineering problems as well as the science behind them.
Additional information: A $25 lab fee will be charged. This course will count as a Science Credit.

Honors STEM Design
7570
Grade 11, 12
Honors STEM Design is a class for honors students who are interested in expanding their experience in science and STEM fields. This course will first provide students with a common set of skills to support students in furthering their science education by focusing on the Design-Flow Process, Experimental Design, Statistical Analysis, Reading and Writing Scientific Journals. Then, students will have the freedom to pursue a scientific investigation or project of their choosing. This class will also provide students a platform to demonstrate their research and scientific prowess in various scientific competitions such as, but not limited to the Governor's STEM Challenge, Science Olympiad or the Science Fair.

Honors Seminar of Engineering
754
Grades: 9, 10, 11, 12
Prerequisite: Successful completion of Algebra I
In this honors-level course, students dig deep into the field of engineering, applying high-level math and science standards to engineering concepts as well as hands-on design and testing. Through projects that engage and challenge, students will explore a broad range of engineering topics, including the strength of structures and materials, thermodynamics, mechanisms, and programming for CNC production. Students will develop skills in problem solving, process documentation, and the use of 3D modeling software. This course is designed to provide a foundation for students pursuing higher education in any field of engineering.
Additional information: A $25 lab fee will be charged to offset the cost of materials.

Design, Drafting, and Architecture

Engineering Design Drafting I
711
Honors Engineering Design Drafting I
7112
Grades: 9, 10, 11, 12
Prerequisite: for 9th Grade only: 9th Grade Experiencing Technology
Engineering Design & Drafting I is an introductory course in engineering and visual communications. Students will individually and in small groups employ the latest version of Auto CAD software to explore possibilities and solve real life applications in the engineering design & drafting world. Students will learn the twelve steps of the "Engineering Design Process Flowchart" to design drawings and specifications that will be utilized to build scaled models to test and analyze their problem solving abilities. An introduction to engineering design and drawing, product design, and 3D solid modeling will also take place during the course. This course is recommended for students planning to possibly pursue a career in Engineering or Architecture Design. This is a STEM focused course.
NOTE: You will take one course - either the regular course or the honors weighted course. You cannot repeat either course after you have already taken it.

Additional information: A $25 lab fee will be charged to offset the cost of materials.
Students will have the opportunity to earn an honors course weighting for the designated Applied Engineering and Technology courses by completing a self-directed technological research and development project. Design, execution and communication of applied research in the chosen field of technology must occur above and beyond course expectations. Proposals must be approved and graded by the course instructor.

Engineering Design Drafting II
715
Grades: 10, 11, 12
Prerequisite: Minimum grade of a C in Engineering Design Drafting I
In this second level course, students will be introduced to Industrial Engineering Design. Students will utilize the latest version of AutoCAD software, a powerful 3D solid modeling program, to create technical drawing and specifications of their model. Among the projects undertaken will be the design and development of a three-dimensional object utilizing AutoCAD software and "bring to life" by printing the part on a 3-D printer! This practice is the newest and latest form of technology utilized by Engineers. Students will follow the twelve step "Engineering Design Process Flowchart" model to design and fabricate all their projects. In addition, students will incorporate a design scenario pertaining to their models. This course is recommended for students planning to pursue a career in Engineering. This is a STEM focused course.
Additional Information: A $25 lab fee will be charged to offset the cost of materials.

Honors Architectural Design
718
Grades 10, 11, 12
The Honors Architectural Design course is designed to provide an opportunity for students to research, design, and fabricate a residential model of their dream home of choice. Students will learn all phases of design as they incorporate the "12 Steps of the Engineering Design Process" into the different residential building plans. Foundation, Electrical, Traffic Flow, Elevation's, etc. are just some of the plans that students will learn and develop. Students will learn how to calculate total "Square Footage" of a house and determine a cost analysis spreadsheets along with multiple residential plans of their house design. A 3-D Computer generated rendering of their house will be designed utilizing REVIT software. Students will also learn how to design and print a 3-D scaled model of their house on the 3-D printer! 3-D printing technology will allow students to visualize their design and prepare them with a presentation piece. Students will present a final project presentation of their house utilizing all project drawings and models. This course is recommended for students planning to pursue a career in the Architecture Engineering field.
Additional information: A $25 lab fee will be charged

Woodworking and Materials Processing

Product Design
722
Grades: 9, 10, 11, 12
Prerequisite: for 9th Grade only: 9th Grade Experiencing Technology

This class is an introduction to the Engineering Design Process and the designed world. The emphasis is placed on the processes by which a product (or project) is developed. Materials utilized may include wood, plastic, metals, and ceramic materials. Students will be challenged to solve a variety of design challenges through the creation of a product. Design challenges may include designing and producing a new toy for the Fisher Price Company and creating an accommodating device for individuals with disabilities. Other class objectives may include an understanding of manufacturing, product packaging, and the use of the principles of design.
Additional information: A $25 lab fee will be charged to offset the cost of materials.

Woodworking Technology
727
Honors Woodworking Technology
7271
Grade: 9, 10, 11, 12
Prerequisite: for 9th Grade only: 9th Grade Experiencing Technology
This course provides students with a foundation in woodworking. Topics covered will include tools and machines, assembly, and finishing. This course allows students to research topics and projects of personal interest in the field of cabinetry. Students will complete an introductory woodworking project of their choosing from start to completion. Emphasis will be placed on application of learned skills and techniques.
NOTE: You will take one course - either the regular course or the honors weighted course. You cannot repeat either course after you have already taken it.
Additional information: A $35 lab fee will be charged to offset the cost of materials.
Students will have the opportunity to earn an honors course weighting for the designated Applied Engineering and Technology courses by completing a self-directed technological research and development project. Design, execution and communication of applied research in the chosen field of technology must occur above and beyond course expectations. Proposals must be approved and graded by the course instructor.

Advanced Materials Technology
728
Grade: 10, 11, 12
Prerequisite: Minimum grade of a C in Woodworking Technology
This course is designed to allow students to individually research advanced topics and projects in the field of materials processing. Topics covered will include refinishing, advanced joiner, and pricing a product. Students will also experience CNC Machining and Laser Engraving and apply this technology to their project. Students will select topics and projects that utilize and expand upon acquired skills and concepts from prior Wood working Technology course. Emphasis will be placed on advanced level projects, project design, problem solving, strong measuring skills and safety.
Additional Information: There is a $35 basic lab fee. An additional fee may apply depending on the amount of materials consumed during the class.

Electronics, Robotics & Prototyping I
751
Grade: 9, 10, 11, 12
Prerequisite: for 9th Grade only: 9th Grade Experiencing Technology
This course is designed to acquaint the student with basic electrical systems, robotic principles, and the daily workforce skills used in industry. Students will design, produce, and evaluate their individual projects. During prototype development, students will learn to safely use a variety of hand tools, sheet metal tools, bench top power tools, and rapid prototyping/CNC (computer numerical controlled) machines. Included in this course are the practical application of electrical – electron theory, interactive test-lab equipment, troubleshooting, and schematic reading. In addition to electronics, students will be introduced to the fundamentals of robotics and the Engineering Design Process. Robotics includes a series of introductory labs that focus on robotic systems, functions, and introductory programming.
Additional information: A $25 lab fee will be charged to offset the cost of materials.

Electronics, Robotics & Prototyping II
752
Grade: 10, 11, 12
Prerequisite: Minimum grade of C in Electronics, Robotics & Prototyping I
This course is designed to acquaint the student with many semiconductor components, principles, and systems. During prototype development, students will learn to safely use a variety of hand tools, bench top power tools, and rapid prototyping/CNC (computer numerical controlled) machine. This course allows students to design, redesign, produce, and evaluate individual prototype projects. Rapid prototyping using CNC (computer numerical controlled) machines develop and enhance individual projects and experiences. Included in this course are the practical applications of semiconductor theory, power supplies, transistors, basic amplifiers, power control devices, interactive test-lab equipment, and building a variety of electronic prototype projects. Robotics includes a series of introductory labs. These labs focus on robotic systems, controls, programming, and using a design brief to solve problems.
Additional information: A $25 lab fee will be charged to offset the cost of materials.

Electronics, Robotics & Prototyping III
753
Grade: 10, 11, 12
Prerequisite: Minimum grade of C in Electronics, Robotics & Prototyping II
This course of digital electronic devices is designed to acquaint the student with various digital components, digital circuit principles and systems. During prototype development students will learn to safely use a variety of hand tools, bench top power tools, and rapid prototyping/CNC (computer numeric controlled) machines. This course allows students to design, produce, evaluate, and redesign individual/group prototype projects. Robotics includes a series of labs using the Arduino & NXT interphases to program and control their robotics. These labs focus on using robotic systems, controls, programming, and design briefs to solve a problem or complete specific task.
Additional information: A $25 lab fee will be charged to offset the cost of materials.

Animation, Web Design, Computer Networking

Computer Animation
749
Grade: 9, 10, 11, 12
Prerequisite: for 9th Grade only: 9th Grade Experiencing Technology
Additional information: A $25 lab fee will be charged to offset the cost of materials.
This course is designed as an introductory course in Computer Animation using Adobe Animate Professional. Students will be introduced to the principles of 2D Animation and will also learn how to use Adobe Animate to enhance multimedia design. Projects will include the creation of cartoon characters, animated greeting cards and an animated short!
Additional information: A $25 lab fee will be charged to offset the cost of materials.

Computer Science: Creating and Making
7561
Honors Computer Science: Creating and Making
7563
Grade: 9, 10, 11, 12
This course will introduce students to the world of computer programming and the wide array of activities and careers within the field. In this hands-on, problem-based course, student experiences will involve programming, hardware, software, machine learning, artificial intelligence, and the ethical and legal issues surrounding these topics. Students will work towards problem solutions, create amazing new devices, and collaborate and communicate with their peers and the programming community. While surveying a variety of relevant topics in programming and physical computing, students will explore and develop a capstone project based on individual or collaborative interest and motivation. Students will also develop a portfolio of artifacts and skills acquired.
NOTE: You will take one course - either the regular course or the honors weighted course. You cannot repeat either course after you have already taken it.

Computer Science: Communicating and Connecting
7562
Honors Computer Science: Communicating and Connecting
7564
Grade: 9, 10, 11, 12
This project-based course will introduce students to the global world of computer science. Through hands-on problems, students will build the skills to explore and understand the Internet, cybersecurity, cloud computing, machine learning, and artificial intelligence. Students will harness the interconnected nature of computer science to solve problems, develop their own creations, and communicate with peers and the larger programming community. In addition to developing websites for mobile and desktop devices, visualizing and understanding big data, and the infrastructure that powers the Internet, students will explore how computer algorithms are used to manipulate, sell, and influence people. Students will also develop a portfolio of artifacts and skills acquired.
NOTE: You will take one course - either the regular course or the honors weighted course. You cannot repeat either course after you have already taken it.

AP Computer Science Principles
756
Grades: 10, 11, 12
Prerequisite: Successful completion of Algebra I
This year long course introduces students to the foundational concepts of computer science and challenges them to explore how computing and technology can impact the world. With a unique focus on creative problem solving and real-world applications, AP Computer Science Principles prepares students for college and careers in computer science. The course will introduce students to the creative aspects of programming, abstractions, algorithms, large data sets, the Internet cyber security concerns, and computing impacts. AP Computer Science Principles will give students the opportunity to use technology to address real-world problems and build relevant solutions. In order to earn AP weighted credit, students must take the Advanced Placement examination in May.

ART COURSE DESCRIPTIONS

Student placement in higher level art classes will be based on the following criteria, unless specifically stated in the course description:

- Successful completion of an introductory class or previous level class with a grade of 70% or higher.
- Determining grade will not include grading categories that do not reflect assessment, such as homework or extra credit.
- Earning below a 70% in any art class will make a student ineligible for an art class in the next semester.
- Performance on local assessments, such as midterms and final exams.
- Participation in class activities
- Teacher recommendation

Fundamentals of Design
311
Grade 9, 10, 11, 12
This is a foundation art class. The principles and elements of art and design will be addressed through various art assignments. Students will develop a sense of design as well as an increased ability in drawing, painting, sculpture, and crafts. This class will give you an opportunity to learn art-making techniques by exploring artistic traditions and materials.
Additional information: A lab fee will be charged. Students who already completed Art I should not register for this course

Drawing & Painting I
312
Grade 9, 10, 11, 12
Students will learn about the basic principles of art and design and how they are used to create two-dimensional work. Students will experiment with many techniques and media such as graphite, charcoal, pen & ink, colored pencil, pastels, acrylic painting, watercolor, and mixed media. A number of approaches to drawing and painting will be covered with a focus on drawing from observation.
Additional information: A lab fee will be charged. Students who already completed Drawing I should not register for this course. Students in Grade 9 may register for this course with permission from their Fundamentals of Design instructor.

Drawing & Painting II
313
Grade 10, 11, 12
Prerequisite: Minimum grade of B in Drawing & Painting I required.
This course is for students who successfully completed Drawing & Painting I, and wish to further their knowledge of two-dimensional techniques and materials. Approaches to drawing and painting will be explored with a focus on working from observation. This class is recommended for anyone wishing to develop a portfolio or enroll in AP Studio Art.
Additional information: A lab fee will be charged. Students who already completed Drawing II should not register for this course.

Trends in Ceramics and Crafts and **Traditions in Ceramics and Crafts** are two different courses that may be taken in either order. The skills and knowledge acquired in the first course will continue to be developed and expanded on in the second.

Trends in Ceramics and Crafts
320
Grade 9, 10, 11, 12
The use of ceramics and other crafts has been around since the beginning of history, but their roles in artistic expression went through significant changes in the last century. In this class you will learn about current trends in the world of crafts. Through a variety of hand building experiences you will learn more about yourself and the artists and movements that changed the way we think about clay and crafts.
Additional information: A lab fee will be charged.

Traditions Ceramic and Crafts
321
Grade 9, 10, 11, 12
Ceramics and crafts have played an important role in history and in multiple cultural traditions. In this class you will learn about the rich history of ceramics and other crafts. Through a variety of hand building projects, you will learn more about your own abilities in clay and the significant traditions of both clay and other crafts.
Additional information: A lab fee will be charged.

Digital Photography I
331
Grades 10, 11, 12
This is a Computer Art class with a focus on Photography and digital media. It is a beginning level course with an emphasis on the elements of art and the principles of visual design. This course is designed to explore the use of the digital camera as a means of artistic expression and observation. Students will spend a majority of in class time using photo editing software to enhance and transform digital images into art. Students will be encouraged to articulate their ideas by group critique sessions.
Additional information: A lab fee will be charged. No prior knowledge of digital cameras or computers necessary but will be helpful.

Digital Photography II
332
Grades 11, 12
Prerequisite: **Minimum grade of a B in Photography I is required.**
This course is designed for the serious photography student. Advanced techniques in digital photography will be discussed and critical problem solving will be covered. Students will be exposed to studio *fine* art photography expectations with various lighting skills. Students will improve practical skills to produce expressive images and have an increased awareness of art and its power. Various software-editing programs commonly used by professionals will be utilized. Students will also expand their ability to discuss and interpret works of art, specifically photographs.

Additional information: A lab fee will be charged.

Yearbook/Creative Publications Design
345
Grade 9, 10, 11, 12
Prerequisite: Yearbook adviser approval after formal application.
This course is open to students interested in the team centered collaborative field of Yearbook publications. Students will work together to integrate all yearbook production elements from copy, photography, page layout, and business to produce the TRUMPETER, Penn Manor High School's yearbook. Course work will include marketing, banking, advertising digital photography, creative writing, page design and layout, typography design tools, and interview techniques. Students are required to sell one page of community business ads. Computers will be used in all phases of the class focusing on Jostens Year Book layout program, digital photography, and word processing.
Additional information: Students must apply in February and win adviser and editor invitation in order to register for this class.

Honors Yearbook/Honors Creative Publications Design
346
Grade 11, 12
This course is reserved for those yearbook staff members who have successfully completed two semester of Creative Publications and have been selected to serve in the leadership positions of editor, or section editor. Classes beyond the first two semesters will be considered for honors status and application for an editor position. Requirements include but are not limited to:

• Having completed two full mini-16 and graphics notebook projects with ready-to-use ideas for the coming year.

• Completing summer work of full design of the student life, sports, academic, and people, community, and organizations sections for the upcoming year's Trumpeter.

• Effectively introducing and then utilizing staff concepts and designs and transferring those ideas to Jostens yearbook avenue formats.

• Selecting fonts, headlines, common element/copy styles, and caption styles and making these computer ready for team's work on the first day of school.

• Developing completed copy ideas for every spread in the book.

• Completing all specialty spreads.

• Developing a workable theme complete with cover, divider, and opening layouts.

• Working out of school to meet deadlines.

• Leadership skills in team building and management. Skills that inspire respect, staff efficiency and cooperation.

Commercial Art
361
Grade 9, 10, 11, 12
In this computer art class students will be introduced to art for commercial purposes. Students will learn about design and how good design communicates to the masses. Designers are required to have both artistic and computer skills. Some topics covered in the class include book/magazine design. Typography and logo design, as well as product design. Some hand drawing is required, however, most of the curriculum is centered on industry standard software such as Adobe Photoshop, Illustrator and InDesign.
Additional information: A lab fee will be charged. No prior knowledge of software programs is required.

Advanced Placement Studio Art (Drawing Portfolio)
391
Grade 11, 12
Prerequisite: Minimum grade of a B in three previous art classes, portfolio review, approval from AP Studio Art instructor, and successful completion of summer artwork and reading.
The Advanced Placement Drawing class is a yearlong, studio-based art class that enables highly motivated students to perform at the college level while still in high school. This advanced class is for juniors and seniors with a real desire to learn about their potential in the field of art. This is a demanding class that requires discipline and commitment to your work beyond the scheduled class time. The class will consist of studio projects with an emphasis on individual direction and excellence. Drawing can be defined and interpreted in numerous ways, and the work you create may span virtually all two-dimensional art media, techniques, and concepts. Grading will be based on the successful completion of a well-developed portfolio. To receive AP weighted credit, students must submit a portfolio.
Additional information: A lab fee will be charged.

Video Production
392
Grade 10, 11, 12 (Grade 9 with counselor recommendation)
Prerequisite: Students may not take Video Production and Television Production in the same semester. Students who have completed this course and would like to continue in Video Production must have the signed approval of the instructor.
Interested in visual communication? Here is your chance to tell a story. In video production you will learn how to develop story ideas, write scripts, shoot video, conduct interviews, use sound and light, and edit raw material to create a good story. The projects created in this class will be featured on the daily PMTV show, but this class will not be involved in the production of the show.
Additional information: This course involves computer editing.

Video Production II
398
Grade 10, 11, 12 (Grade 9 with counselor recommendation)
Prerequisite: Minimum grade of a B in Video Production
You must possess the following qualities: the ability to work on a team, be comfortable speaking in front of a camera and other people, be accountable for assigned responsibilities, meet deadlines, have a good vocabulary, and have a serious interest in video production. This course's primary objective is to give students the necessary skills to function in a Video broadcasting center. Students are responsible for all aspects of a video broadcast in front and behind the scenes operations, including editing, studio presentations, sound mixing, video graphics, camera operations, and scriptwriting. This class is responsible for producing the daily PMTV show.
Additional information: Students may not take Video Production and Video Production II in the same semester. Students who have completed this course and would like to continue in Video Production must have the instructor's signed approval.

BUSINESS TECHNOLOGY COURSE OFFERINGS AND SEQUENCES

The flowchart below lists the standard progression of courses within the Business Technology Department. Students should review the course descriptions to determine which courses are right for their goals, grade level, and grades in previous courses. Students should make sure they meet the prerequisites, listed in the course descriptions, for the courses they want and that they obtain any teacher recommendations needed.

Student placement in higher-level Business Education classes will be based on the following criteria, unless specifically stated in the course description:

- Successful completion of an introductory class or previous level class with a grade of 70% or higher.
- Determining grade will not include grading categories that do not reflect assessment, such as homework or extra credit.
- Performance on local assessment, such as midterms and final exams.
- Participation in class activities
- Teacher recommendation

Grade 10, 11, & 12
Accounting I / Honors
Honors Accounting II (Independent Study)
Marketing / Advertising
Entrepreneurship
International Business & Investing / Honors

Open Campus Classes
Open Campus course descriptions can be found in Appendix A of the Course Selection Guide.

Student placement in higher-level Business Education classes will be based on the following criteria, unless specifically stated in the course description:

- Successful completion of an introductory class or previous level class with a grade of 70%.
- Performance on local assessment, such as midterms and final exams.
- Participation in class activities
- Teacher recommendation

CAREER PATHS IN BUSINESS TECHNOLOGIES

Courses that would be beneficial to have in the mentioned careers:

Accountant, Actuary, Auditor, CFO • Accounting I • Accounting II (Independent Study) • Entrepreneurship	**FBI Agent** • Accounting I • International Business & Investing • Entrepreneurship
Entrepreneur, CEO, Business Executive or Owner • Entrepreneurship • Accounting I • Marketing/Advertising • International Business & Investing • Open Campus Personal Financial Literacy • Open Campus Web Development	**Financial Advisor, Manager, Loan Officer** • Accounting I • Accounting II (Independent Study) • International Business & Investing • Entrepreneurship • Open Campus Personal Financial Literacy
Meeting, Convention, Event Planner, Sports & Entertainment Marketing or Management • Accounting I • Entrepreneurship • Marketing/Advertising • International Business & Investing • Open Campus Sports & Entertainment Marketing • Open Campus Personal Financial Literacy • Open Campus Web Development	**Business Administration or Management, Construction Management** • Accounting I • Entrepreneurship • Marketing/Advertising • International Business & Investing • Accounting II (Independent Study) • Open Campus Personal Financial Literacy • Open Campus Web Development
Sales or Account Executive • Entrepreneurship • Accounting I • Marketing/Advertising • International Business & Investing • Open Campus Personal Financial Literacy • Open Campus Web Development	**Web Manager, Social Media Manager, Technology Director** • Marketing/Advertising • Entrepreneurship • International Business & Investing • Open Campus Personal Financial Literacy • Open Campus Web Development
Engineer • Accounting I • Entrepreneurship	

Accounting I
421
Honors Accounting I
4212
Grade 10, 11, 12

Thinking about going to college and majoring in business or entering directly into the workforce after school; then this course is for you. All business majors in a traditional business program at a college or business school are required to take an entry-level accounting course. Take Accounting I now and get a head start on the others. The course uses the accounting cycle to teach accounting theory and applications. After learning the basic use of a journal and ledger, special accounting

systems and procedures are covered. The computer will also be used for basic automated accounting activities following the mastery of accounting theory. The ability to grasp concepts and problem solve is essential to succeed in this course.
NOTE: You will take one course - either the regular course or the honors weighted course. You cannot repeat either course after you have already taken it.
Additional Information: For students attending Consolidated School of Business, this course can be transferred for credit if a B or above is achieved. If taking for honors credit students will be required to be self-directed with additional chapters and must complete an accounting topic research project with an accompanying essay of their findings complete with references.

Honors Accounting II – Independent Study
422
Grade 11, 12
Prerequisite - Minimum grade of A in Accounting I; Permission of Instructor
This course picks up where Accounting I ends. After a review of the accounting cycle learned in Accounting I, the course covers several new adjusting entries. The year begins with a thorough review of the accounting cycle by completing a business simulation.
Additional Information: This course is an independent study format. Student should be self-directed. The student must get the book, workbook, course syllabus and outline from the instructor at the beginning of the class.

Marketing & Advertising
441
Grade 10, 11, 12
Students examine marketing concepts, functions, operations and organizations of businesses from the perspective of a business owner, marketing professional, and consumer. Students will have the opportunity to conduct market research, develop a marketing plan, analyze case studies, recognize the latest marketing trends, discuss ethical marketing practices, and understand multicultural perspectives. This course also takes a look at media advertising elements, including digital, mobile, and social networks while reinforcing the importance of traditional components--television, magazine, online, and outdoor advertising--with everyday applications. Discussion on advertising initiatives features current campaigns, agency relationships, and media organizations. The study of marketing/advertising culminates with the opportunity to produce marketing plans for a product, service, and/or event. Students will gain knowledge of how to work with a variety of clients to develop promotional materials.

International Business & Investing
445
Honors International Business & Investing
4451
Grade 11, 12
Prerequisite - Minimum grade of C in Algebra I or minimum of B in Introduction to Algebra, B or C in Marketing/Advertising or Entrepreneurship or Accounting I
Cross the borders of our country and journey into the world of global economics! Students will study the many aspects involved when conducting business in a global economy. Students will develop an appreciation and the knowledge and skills needed to live and work in a global

marketplace. Lessons will focus on the cultural diversities involved in international business and shed insights into an appreciation of other cultures. Topics will focus on finance, marketing, communications, human resources, multicultural awareness, business ownership, international business law, communication systems and E-commerce. Activities will involve graph and map analyses, math exercises in currency conversion, writing activities, case-studies relating to world issues, charting/graphing data and Internet research. The time is now to invest in your future! This portion of the course will guide students through the decision-making process of deciding how to save and invest for their future. Topics will range from simple savings accounts, certificates of deposit, money market funds to investing in the stock market, and understanding credit and insurance. During the course, students will participate in a stock market simulation.
NOTE: You will take one course - either the regular course or the honors weighted course. You cannot repeat either course after you have already taken it.
Additional Information: In addition to the curriculum above, honors students must complete an International Business and/or Investing research project with an accompanying essay complete with MLA references.

Entrepreneurship
451
Grade 10, 11, 12
Are you interested in owning your own business, do you want a more in-depth look at the business world? You will learn about all aspects of running your own business. You will work in a small group to complete a hands-on project where you will develop, operate, and liquidate a business for a short period of time. You will also be responsible for creating a business plan for a business you could run. You will be learning about setting goals, mission, vision and value statements, human resources, marketing, finance, public relations, and operations of a business. You will also be choosing a business book to enhance your understanding of business.
Additional Information: Students in this course should be self-motivated, hardworking, and dedicated for success in this course.

ELECTIVES OPPORTUNITIES FOR JUNIORS AND SENIORS
COURSE OFFERINGS AND SEQUENCES

The flowchart below lists the standard progression of elective courses for juniors and seniors. Students should review the course descriptions to determine which courses are right for their goals, grade level, and grades in previous courses. Students should make sure they meet the prerequisites, listed in the course descriptions, for the courses they want and that they obtain any teacher recommendations needed.

Grade 11	Grade 12
Service Learning	Career Internship
Service Learning Independent Study	Career Internship Independent Study
Theatre Arts (available for Grade 10)	Work Study
	1:1 Help Desk
	Theatre Arts

ELECTIVE OPPORTUNITIES FOR JUNIORS AND SENIORS COURSE DESCRIPTIONS

ELECTIVE OPPORTUNITIES FOR JUNIORS

Service Learning
916
Grade 11, 12
Prerequisites - 2.0 G.P.A. and 90% Attendance
Passing all Subjects
Personal Transportation within the first six weeks of school
This course is designed for students in grades 11 and 12 who want to explore community service. Students will receive 1 credit for completing a minimum of 75 hours of community service. Attendance at a weekly class meeting is mandatory as is the completion and submission of a weekly time log, a reflection project each marking period, a service learning report, the keeping of a daily journal and a senior citizen interview. There will be no on-campus placements except for those who are awaiting their driver's license (students who want to work on campus should seek out a teacher to become a student intern). Students will explore community service at three separate sites (unless approved otherwise by the instructor). Students who develop discipline issues during the semester may be dropped from the course without receiving credit. No grade will be awarded for the Service Learning Experience, but one credit will be noted on the transcript.

Service Learning Independent Study
917
Grade 11, 12
Prerequisites - Service Learning with a minimum grade of a B
2.5 G.P.A. and 90% Attendance
Personal Transportation
This course is designed for students who have completed Service Learning in the classroom and would like to continue their involvement in community service projects. Service activities are performed during the regular school day. Students may only work at community service sites—non-profit organizations. A minimum of 80 service hours (5 hours per week) is required to pass the course. Students may not be paid for their service and are required to submit weekly time logs to the instructor as well as an end-of-marking period reflection paper. Students must be passing all subjects and have his/her own transportation. No grade will be awarded for the Service Learning Experience, but one credit will be noted on the transcript.

ELECTIVE OPPORTUNITIES FOR SENIORS

Career Internships
909
Grade 12
Prerequisite - 2.5 G.P.A. and 90% attendance
The Career Internship Program is intended to provide Penn Manor High School seniors with opportunities to participate in on-site observations of business and professional organizations. This program provides students with the opportunity to interact with, observe, and assist individuals who are employed in the profession. The intent of the internship is to provide activities that enable the student to make informed career decisions based on significant knowledge and insights developed during participation.

Additional information

- The student is responsible for initiating and securing a career internship experience in their identified career field.
- Seniors applying for an internship must demonstrate a satisfactory attendance record, be passing all subjects, and be a responsible citizen.
- Students may not be paid for their internship experience.
- Students spend five hours each week participating in the internship experience.
- Students will schedule the career internship option during the course selection process.
- No grade will be awarded for the Career Internship Experience but one credit will be noted on the transcript.
- Class rank will not be affected by the internship.
- This course is not for students who plan to work in the agricultural industry. Students who wish to work in agriculture must register for Ag Co-op.

Activity
Career Internship participants are released from school during a block of their schedule to participate in an internship experience in the greater Lancaster community. The job specific activities in which a student may participate or observe will be determined by the participating business or organization in cooperation with the student, parents, and school. No student may participate in activities that would be considered unusually dangerous or inappropriate for his/her age level. The internship site must be in the identified career field of the student.

Steps to Implement Internship

- Student must participate in career shadowing in junior year then schedules internship for the following year.
- Student reviews internship agreement
- Student contacts businesses/organizations and arranges internship prior to September of senior year.
- Student, parent and site supervisor complete internship contract.
- Student secures approval of site from intern advisor (justification meeting)
- Student arranges transportation to internship site.
- Student prepares daily journal of experience for internship activity.

- Supervisor signs journal each week to verify attendance.
- Student submits journal to internship supervisor each month.
- Student submits evaluation form, 2 times, completed by site supervisor.
- Student attends three mandatory meetings with intern advisor.

Work Study
913
Grade 12
Prerequisite - 2.0 G.P.A. and 90% attendance
Work Study is a program in which students can be released from school and earn a credit for their employment. Students are required to work a minimum of 10 hours per week. Students are required to turn in weekly time sheets. Students must maintain a grade point average of no less than 2.0 and an attendance rate of 90% or better. Work Study is only open to seniors who plan to directly enter the work force upon graduation from high school. This course is not intended for students continuing their education at a post-secondary educational institution after graduation. Placements are made on job availability. If a student is not employed at the start of school in September, a class will have to be scheduled. No grade will be awarded for Work Study, but one credit will be noted on the transcript.

OTHER ELECTIVE OPPORTUNITIES
COURSE DESCRIPTIONS

Technology Help Desk Apprenticeship
Grade 9, 10, 11, 12
Prerequisite: 2.5 GPA, 90% Attendance, Instructor Permission
This course provides hands-on support for the Penn Manor High School 1:1 Laptop Program. Student help desk apprentices will build meaningful technical knowledge and problem-solving skills while providing valuable support to their peers. Under the guidance and supervision of Penn Manor IT staff, student help desk apprentices will provide technical consultation and service, perform hardware repairs, resolve software problems, develop art/graphics, design and code software programs and create training/help guides. Projects will be individualized based on student interests, strengths and skills. Note that students at all technology skill levels and interests are encouraged to pursue this course. This unique experience will prepare students for professional careers in technology fields and beyond.

Theatre Arts
921
Grade 10, 11, 12
This elective course will introduce students to many aspects of theatre – related to performance skills as well as what goes on behind the scenes in a theatre. Topics of study will include: vocal techniques and the audition process, character & script analysis, scenic design, sound & lighting, costume design and make up techniques. Information related to the history of and careers in theatre, and the business side of a production will also be included. Students will be actively involved in all phases of dramatics.

ENGLISH COURSE OFFERINGS AND SEQUENCES

The flowchart below lists the standard progression of courses within the English Department. However, other courses are offered that also fulfill English requirements. Students should review the course descriptions to determine which courses are right for their goals, grade level, and grades in previous courses. Students should make sure they meet the prerequisites, listed in the course descriptions, for the courses they want and that they obtain any teacher recommendations needed. Advanced Placement Literature and Advance Placement Composition are two-credit courses that meet for both semesters.

Recommended Grade	Career Prep	College Prep	Honors	Advanced Placement
Grade 9	Foundations of Literacy I - A and B	CP Foundations of Literacy	Honors Foundations of Literacy	
Grade 10	Foundations of Literacy II	CP Foundations of Literacy II	Honors American Literature & Composition	
Grade 11	Applications of Literacy & Composition	CP American Literature & Composition CP World Literature	Honors British Literature & Composition	AP Literature AP Composition
Grade 12	Senior English	CP English Composition CP World Literature	Honors English Composition	AP Literature AP Composition
Grade 9-12	English Language			

Recommendations:
Students are encouraged to take more than four English courses during their high school career. Courses in journalism, creative writing, and world literature, while not included in the traditional progression of courses, are recommended for enrichment. There is a summer reading requirement for all College Prep, Honors, and AP level classes. Consult the high school library website during the summer for details.

Additional Recommendations:
CP Creative Writing (available to students who have passed the Keystone Literature Exam).
CP Journalism (available to students who have passed the Keystone Literature Exam)
CP World Literature and Composition (available as an English credit for juniors and seniors)

Open Campus Classes
Open Campus course descriptions can be found in Appendix A of the Course Selection Guide.

ENGLISH COURSE DESCRIPTIONS

Student placement in English classes will be based on the following criteria, unless specifically stated in the course description:

- Grade from previous class
- To remain in an Honors class, grade must be at least a B
- To remain in College Prep level courses, grade must be at least a C
- To move to a higher level of coursework, grade must be an A and teacher recommendation must be given
- Performance on local assessments, such as benchmarks, midterms and final exams
- Keystone Exam scores
- PVAAS projections of proficiency levels
- Teacher recommendation

Foundations of Literacy A
122
Grade 9
2 Credits 1 English/1 Elective
This is a fundamental course to further the development of reading and writing skills. Emphasis is placed on both fiction and nonfiction reading. Vocabulary development is ongoing.

Foundations of Literacy B
Grade 9
2 Credits 1 English/1 Elective
This is a fundamental course to further the development of reading and writing skills. Emphasis is placed on both fiction and nonfiction reading. Vocabulary development is ongoing.

College Prep Foundations of Literacy
123
Grade 9
Emphasis in this course is on understanding several genres of literature: drama, short story, and novel. Analysis of themes and literary terms is included. Research skills are introduced. Vocabulary instruction is ongoing.
Additional information: There is a summer reading requirement for this course.

Honors Foundations of Literacy
124
Grade 9
Honors Foundations of Literacy is an accelerated course for students who have excelled in English 8 and who have been recommended by their 8th grade English teacher as having the academic skills in both reading and writing as well as the willingness to continue to challenge themselves and to participate actively in a fast-paced, demanding academic environment. Emphasis in this course is on understanding several genres of literature: drama, short story, and novel. Analysis of themes and literary terms is included. Research skills are introduced. Vocabulary instruction is ongoing.
Additional information: There is a summer reading requirement for this course.

Foundations of Literacy II
128
Grade 10
Foundations of Literacy II builds upon the fundamentals of Foundations of Literacy with a continuing emphasis on developing reading skills. Literature studies include fiction, nonfiction, and poetry. Vocabulary development is ongoing. Usage, grammar, and mechanics will be improved through writing instruction.
Additional information: Students are required to take the Literature Keystone Exam at the conclusion of this course.

College Prep Foundations of Literacy II
126
Grade 10
This college preparatory course is for students whose abilities have gone beyond that required for Foundations of Literacy II. Students will hone their skills in English through the reading of short stories, novel, and nonfiction texts. In addition to building upon the fundamentals of CP Foundations of Literacy, students will be building on research skills and demonstrating their understanding through the creation of a research paper.
Additional information: There is a summer reading requirement for this course. Students will be required to take the Literature Keystone Exam at the conclusion of this course. The only exceptions will be if the student has previously taken and scored Advanced or Proficient on the Literature Keystone Exam.

Honors American Literature and Composition 10
145
Grade 10
This survey course in American Literature provides an overview of the development of American literature from the Colonial Period to the Modern Period. Reading and writing demands for the course are rigorous. Speech, vocabulary, and writing instruction, as well as instruction in research methods, are included. Usage, grammar, and mechanics will be improved through writing instruction. A literature-based research paper is a course requirement.
Additional information: There is a summer reading requirement for this course Students will be required to take the Literature Keystone Exam at the conclusion of this course. The only

exceptions will be if the student has previously taken and scored Advanced or Proficient on the Literature Keystone Exam.

Applications of Literacy and Composition
129
Grade 11
Students in Applications of Literacy and Composition will read critically through analyzing and interpreting both literature and nonfiction. Preparation for careers will be ongoing through the development of writing skills and speaking and listening activities. Through thoughtful discussions and application of class lessons, students are expected to achieve a greater understanding of the academic skills necessary to be career ready. The course will also review all content students are required to master to be successful of the Literature Keystone Exam.
Additional information: Students will be required to take the Literature Keystone Exam at the conclusion of this course. The only exceptions will be if the student has previously taken and scored Advanced or Proficient on the Literature Keystone Exam.

College Prep American Literature and Composition
131
Grade 11
This course is recommended for eleventh grade college-bound students. American authors and their works are studied chronologically from the Colonial Period to the Modern Period. Contemporary American writers are included as their writings relate thematically to the earlier periods. Vocabulary, grammar and usage, and writing instruction are all included in the course. A research paper is a course requirement.
Additional information: There is a summer reading requirement for this course.

Honors British Literature and Composition
141
Grade 11
This Honors course for college-bound students is designed as a survey course of British literature, beginning with the Anglo-Saxon Period and concluding with the 20th Century. In addition to literary study, students will work with vocabulary, and writing correlated with reading. A research paper is a course requirement.
Additional information: There is a summer reading requirement for this course.

College Prep Creative Writing, Poetry and Fiction
133
Grade 10, 11, 12
Prerequisite: Students who qualify for a College Prep level course. Does not count as an English credit.
This writing course is intended for sophomores, juniors, and seniors who have a compelling interest in learning to write poetry, short fiction and narration for an audience of both peers and the public. It includes an intensive study of the qualities of good writing, including figurative language, as well as reading and interpretation of various types of poetry and fiction that are considered models of good writing. Class members will publish their work by reading it aloud and by submitting it to various contests and publications that are available to them.

College Prep Journalism
135
Grade 11, 12
Prerequisite: Students who have passed the Keystone Literature Exam and qualify for a College Prep level course. Does not count as an English credit.
This course is open to eleventh- and twelfth-grade students who are interested in the fields of journalism and media analysis. Students will learn about and practice investigative reporting, study and create opinion pieces and feature articles, and extensively write, revise, and edit their compositions with an eye towards publication. A strong focus on teamwork, collaboration, and student-led research projects will be utilized throughout the duration of the course.

College Prep World Literature and Composition
142
Grade 11, 12
World Literature and Composition is designed for juniors and seniors who wish to look into the literary works of other languages and cultures. This course provides the student with an opportunity to develop a greater world understanding-- a necessary goal in this age of shrinking distances and instantaneous worldwide communication. Students will closely study a wide range of literary forms, including novels, short stories, poetry and drama. Writing, primarily in the form of critical essays and "creative" pieces, will be emphasized. A research project is a course requirement.
Additional information: There is a summer reading requirement for this course.

Senior English
130
Grade 12
Senior English is designed to prepare twelfth-grade students for the reading, writing, critical thinking, and communication skills necessary for post-secondary options including, but not limited to, undergraduate work, technical schools, apprenticeships, the work force, and the military. Literature studies include both fiction and nonfiction selections. Vocabulary and grammar development is on-going. By the end of the course, students should have the language arts skills they need to continue their education or pursue other endeavors.

College Prep English Composition
134
Grade 12
This course is designed for college-bound seniors as preparation for the demands of college-level writing courses. Students will write informational and critical essays, argument, and narration. Grammar, mechanics, and usage will be reviewed as needed. Student writing will be based on the reading of various works of non-fiction and fiction. A research paper is a course requirement.
Additional information: There is a summer reading requirement for this course.

Honors English Composition
127
Grade 12
This course is an intensive writing course for college-bound students who already possess a basic knowledge of grammatical and language conventions. Students will write literary analyses, informational and critical essays, argument, persuasion, and narration. Grammar, mechanics, and usage will be reviewed as needed. Student writing will be based on the reading of various works of non-fiction and fiction. A research paper is a course requirement.
Additional information: There is a summer reading requirement for this course.

Advanced Placement English – Literature & Composition
137
Grade 11, 12
Prerequisite: Honors British Literature and teacher recommendation
AP Literature is a year-long intensive literature, writing, and research course for academically adept students. Students will study representative short stories, plays, novels, and poetry by Western and Eastern European, British, and American authors, playwrights, and poets. Through discussion, reading, writing, and research, students will extend their knowledge of literature and their understanding of human experience. Continued improvement of writing skills is stressed. Students who complete this class will earn two weighted credits. In order to earn AP weighted credit, students must take the Advanced Placement examination in May.
Additional information: A reading list will be made available to entering AP students for summer reading.

Advanced Placement English – Language & Composition
147
Grade 11, 12
Prerequisite: Honors British Literature and teacher recommendation
This year-long course is designed to enable students to read complex texts written in a variety of rhetorical contexts and to write rich prose for a variety of purposes. This course requires both extensive reading and writing, including a researched argument paper that synthesizes and evaluates both primary and secondary sources. Students who complete this class will earn two weighted credits. In order to earn AP weighted credit, students must take the Advanced Placement exam in May.
Additional information: A reading list will be made available to entering AP students for summer reading.

Language Literacy 1
010
2 Credits
The English Learner (EL) program at Penn Manor is designed to provide instruction in the English language for students who are at different levels of English language acquisition. The Pennsylvania Department of Education (PDE) directs each school district to provide core curriculum of EL instruction for entering, beginning, developing, expanding, bridging, and reaching English learning students. This course is for level 1 English learners and English learner newcomers.

Language Literacy 2
0102
2 Credits
The English Learner (EL) program at Penn Manor is designed to provide instruction in the English language for students who are at different levels of English language acquisition. The Pennsylvania Department of Education (PDE) directs each school district to provide core curriculum of EL instruction for entering, beginning, developing, expanding, bridging, and reaching English learning students. This course is designed for level 2 English learners.

Language Literacy 3
0103
1 Credit
The English Learner (EL) program at Penn Manor is designed to provide instruction in the English language for students who are at different levels of English language acquisition. The Pennsylvania Department of Education (PDE) directs each school district to provide core curriculum of EL instruction for entering, beginning, developing, expanding, bridging, and reaching English learning students. This course is designed for level 3 English learners.

FAMILY AND CONSUMER SCIENCES OFFERINGS AND SEQUENCES

The study of Family and Consumer Sciences will introduce a student to the study of information and resources to empower individuals and strengthen families. An introductory FCS Skills class is available to ninth grade students entering Penn Manor High School. This will provide an introduction to many areas of Family and Consumer Sciences, which will be available as electives to upperclassman. All other courses are content specific.

The flowchart below lists the standard progression of courses within the Family and Consumer Sciences Department. Students should review the course descriptions to determine which courses are right for their goals, grade level, and grades in previous courses. (Students should make sure they meet the prerequisites for the courses they want and that they obtain any teacher recommendations needed.)

Student placement in advanced Family and Consumer Sciences classes will be based on the following criteria, unless specifically stated in the course description:

- Successful completion of an introductory or previous level course with a minimum grade of 70%.
- Performance on local assessments, such as midterms and final exams.
- Participation in class activities
- Teacher recommendation

Grade 9	Grade 10	Grade 11 and 12
FCS Skills	Nutrition and Food Science	Nutrition and Food Science
	Child Development	Advanced Nutrition and Food Science
	Fashion and Design Foundations	Child Development
	Housing and Design	Fashion and Design Foundations
		Advanced Fashion and Design
		Living On Your Own
		Housing and Design

*FCC Skills (630) is not a prerequisite for other course electives.

FAMILY AND CONSUMER SCIENCE COURSE DESCRIPTIONS

Family and Consumer Sciences is the field of study and profession that involves the economics and management of the family, home, and community. The field represents many disciplines including consumer science, nutrition, food preparation, parenting, early childhood education, family economics and finances, human growth and development, interior design, textiles and apparel design, and general life skills.

Career Opportunities in Family and Consumer Sciences
Courses that would be beneficial to have for the mentioned careers:

Nutrition & Food Science/Advanced

Bakery/Cake Decorator
Caterer
Chef/Cook
Dietician
Food Safety Inspector
Food Science/Researcher
Food Stylist/Photographer
Food Writer/Critic
Health/Sports Trainer
Product Development
Restaurant Manager
Test Kitchen Research

Child Development

Child Care Center
Early Childhood Caregiver
Family Advocate
Family/School Counselor
Head Start
Midwife
Pediatric Nurse
Pediatrician
Preschool Educator
Teacher
Social Worker

Housing & Design

Architect
Real Estate
Appraiser
Title Searcher
Property Manager
Building Contractor
Project Manager
Land Developer
Mason Woodworker
Interior Designer
Landscaper
Furniture Designer
Lighting Coordinator/Designer
Certified Kitchen Designers
Healthcare Designers
Home Lighting Advisors
Interior Decorators
Kitchen and Bath Designers

General Studies
(FCS Skills/Living On Your Own)

Adult Skills
Consumerism
Financial Consultant
Personal Finances
Parenting Skills
Recreation/Elderly Care Work
Wellness and Nutrition

Fashion and Design Foundations/Advanced

Apparel Production
Bridal Consultant
Clothing Store Buyer/Manager
Fashion Journalist/Photographer
Fashion Merchandising
Historical Fashion Research/Designer
Marketing
Pattern Making/Design
Retail Sales/Advertising
Textile Designer/Stylist

Introduction to Family and Consumer Sciences: Skills
630
Grade 9
Introduction to Family and Consumer Sciences focuses on the areas defined by the Pennsylvania Academic Standards for Family and Consumer Sciences. They include family relationships, child development, caregiver experiences, consumer skills, personal financial education, foods and nutrition, and career exploration. Career Exploration is also based on the Pennsylvania Academic Standards for Career Education and Work. Students will discover their personality preferences and connect them to a pathway and career using Xello. Students will learn the skills needed to succeed in the workplace. Students will be exposed to activities related to finding a job, resumé writing, interviewing, and soft skills necessary to succeed in their careers.

Nutrition and Food Science
621
Grade 10, 11, 12
This course provides practical activities in the classroom and foods lab to promote knowledge of nutrition, food and their preparations techniques. The course combines food safety, consumer strategies, personal nutrition and healthy eating, kitchen skills, current topical issues, and food group exploration and application.
Additional information: A lab fee will be charged.

Advanced Nutrition and Food Science
622
Grade 11, 12
Offered in even number years
This course is a sequel to Nutrition and Food Science and further explores techniques and principles of food preparation. A primary objective of the course is to develop the skills used in planning and preparing nutritious meals as well as making good decisions when purchasing foods. Studies include bread making, vegetarianism, cake decorating, soups and salads. A second objective of the course is to increase students' awareness, enjoyment and creativity through an

understanding of International foods and their cultural significance, nutritive value, unique flavors and attractive appearance.
Additional information: A lab fee will be charged.

Child Development
623
Grade 10, 11, 12
This course focuses on preparation for childcare, careers related to children or parenting. Students will study the functions of families and parenting skills. The course includes information from prenatal development through school-aged children with an emphasis on stages of growth and development of children. Units on toys, safety, and healthy eating will also be included.

Fashion and Design Foundations
625
Grade 10, 11, 12
Offered in even number years
This course is designed for students who have an interest in fabrics, fabric crafts, and clothing construction. Students will work in the sewing lab to complete a variety of projects of their choosing, determined by their experience and interests. Students will have access to computerized sewing machines. Projects may include fabric crafts, patchwork and quilting, machine embroidery, as well as the construction of garments. Students need to provide materials for individual projects.
Additional information: A lab fee will be charged for class portfolio. Students are responsible for individual materials for their clothing construction projects.

Advanced Fashion and Design
626
Grade 11, 12
Offered in even number years
This course is designed as a continuation of Fashion and Design. Students are encouraged to develop advanced skills as they work on sewing projects and garment construction. Students taking Advanced Fashion and Design are required to complete more challenging projects as they develop their machine and construction skills. Students need to provide some materials for class projects.
Additional information: A lab fee will be charged for class portfolio. Students are responsible for individual materials for their clothing construction projects.

Living on Your Own
632
Grade 11, 12
This course is designed to introduce students to the skills and abilities necessary for adult life. Areas of study include personal financial education, including renting/buying a home and car purchase, nutrition and meal preparation, clothing care, consumer skills, child development and personal development.

Housing and Design
628
Grade 10, 11, 12
Offered in odd number years
Housing and Design addresses selecting and planning living environments to meet the needs and wants of individuals and families throughout the family life cycle. The project-based approach in this course utilizes higher order thinking, communication, leadership, and management processes to integrate housing and interior design content. Topics to be studied include: housing styles, ownership options, contemporary housing issues, environmental energy issues; impacts of technology; ADA compliance options; elements and principles of design; creating functional, safe, and aesthetic spaces; historical aspects and contemporary trends; cost of living and exploration of housing-related careers.
Additional Information: A lab fee will be charged. Students are responsible for individual materials for their construction projects**.**

LEARNING SUPPORT COURSE OFFERINGS AND SEQUENCES

The flowchart below lists the standard progression of courses within the Learning Support Department. Students should review the course descriptions to determine which courses are appropriate for their goals, academic achievement, and grade level.

Levels of Support

Itinerant – Student is assigned to one or zero special education courses. Both general education and special education teachers could instruct the student.

Supplemental – Student is assigned to a minimum of two learning support classes. The student comes in daily contact with both general education and learning support teachers.

Full time - Classes taught by a learning support teacher that covers course content ranging from middle school to high school grade levels. Students are in a learning support setting for all classes.

English	Math	Social Studies	Science
Reading	Math	Social Studies	Post-Secondary Transition
Foundations of Literacy 9	Transition Math 11/12 A and B	Social Studies/History/ Community-Based Instruction (CBI)	Topics in Science
Foundations of Literacy 10	Practical Math	Employability Skills	
Foundations of Literacy 11/12 A and B			
English/Language Arts			

LEARNING SUPPORT COURSE DESCRIPTIONS

Reading
034
Grade 9, 10, 11, 12
This yearlong course is designed for students whose IEP team determines that extensive instruction is required to develop reading fluency and comprehension. The course uses the *AMP Literacy* program, which is an intervention program that is common core aligned. *AMP* places instructional focus on 7 comprehension strategies (summarizing, questioning, predicting, text structure, visualizing, inferencing, and metacognition) as well as high-frequency vocabulary words and vocabulary strategies. Strategies are taught through gradual release (model, guided practice, and application).

Foundations of Literacy 9
029
Grade 9
This yearlong course is designed for students whose IEP team determines that extensive practice is needed in reading comprehension and writing development. This course utilizes the 9th grade general education curriculum to allow students to access Keystone specific skills, while remediating basic reading and writing skills. Scaffolded lessons will help prepare students for complex reading and writing tasks, while still providing the instruction and support needed to fit the academic needs of the class.

Foundations of Literacy 10
0291
Grade 10
This yearlong course is designed for students whose IEP team determines that a second course of extensive practice is needed in reading comprehension and writing development. This course utilizes the 10th grade general education curriculum to allow students' access to Keystone specific skills, while remediating remaining reading and writing skills. Scaffolded lessons will help students continue to build on skills developed and gained last year, prepare for complex reading and writing tasks, while still providing the instruction and support needed to fit the academic needs of the class.

Foundations of Literacy A and B 11/12
031
Grade 11, 12
This yearlong course is designed for 11th or 12th grade students whose IEP team determined that additional extensive practice in reading comprehension and writing development is needed. This course utilizes the 11th grade general education curriculum with a focus on the skills necessary to be career ready, while providing for the needs of individual learners.

English/Language Arts
052
Grade 9, 10, 11, 12

9th and 10th graders:
This course is designed for students whose IEP team determines a need for ES small group instruction with modifications to the regular education curriculum. This is a fundamental course to further the development of reading and writing skills. Emphasis is placed on both fiction and nonfiction reading. Literature studies include fiction, nonfiction, and poetry. Vocabulary development is ongoing. Usage, grammar, and mechanics will be improved through writing instruction.

11th and 12th graders:
This course is designed for students whose IEP team determines a need for ES small group instruction with modifications to the regular education curriculum. The course will review all content students are required to master to be successful on the Literature Keystone Exam. This course utilizes general education curriculum with a focus on the skills necessary to be career ready, while providing for the needs of individual learners.

Math
036
Grade 9, 10, 11, 12
This yearlong course is part of the Functional Academics Program offered to IEP students as per recommendation of his/her IEP team. This course will focus on functional mathematics and uses a scripted math program. This course also has an emphasis on the student being able to gain mathematical skills and strategies for use post high school.

Transition Math A and B 11/12
042
Grade 11, 12
This yearlong course is designed for 11th and 12th grade IEP students who are currently enrolled in a learning support math class. IEP team placement in this course should occur if the student requires remediation in Keystone areas including: Numeric operation, Measurement, Geometry, Algebraic Concepts, Data Analysis and Probability. Students will develop math skills, Real-Life Investigation and repetitive practice. The course will focus on skills for transition to CTC and preparation for the world of work and independent living.

Practical Math
051
Grade 9, 10, 11, 12
This course is a general math development course designed to prepare Emotional Support students who, as determined by their IEP team, need to develop basic math skills or Pre-Algebra skills in a small group setting. Students will be working on numbers and operations, measurement, geometry, algebraic concepts, data analysis and probability at their educational level.

Social Studies
014
Grade 9, 10, 11, 12
This course is part of the Functional Academics Program offered to IEP students as per recommendation by his/her IEP teacher. Students will learn basic social studies concepts such as basic U.S. History. Students will receive their social studies credit by taking this course.

Social Studies/History/Community-Based Instruction (CBI)
054
Grade 9, 10, 11, 12
This course is a combination of a general Social Studies course and a basic community-related skills course. The Social Studies component is designed to prepare Emotional Support students whose team determines that social studies skills need to be developed within the Emotional Support classroom. Students will be working on social, political, geographical, economic and cultural histories to prepare for transition to regular education US History and Civics. The Community-Based Instruction component is designed to prepare Emotional Support students whose IEP team determines that community based instruction skills need to be developed. Students will develop socially appropriate and productive strategies toward achieving successful interactions and overall involvement within the community, as related to community activities and employability skills.

Employability Skills
059
Grade 9, 10, 11, 12
This course is a general development course designed to prepare Emotional Support students whose IEP team determine that community based instruction skills need to be developed. Students will develop socially appropriate and productive strategies toward achieving successful interactions and overall involvement within the community, as related to community activities and employability skills.

Post-Secondary Transition
039
Grade 11, 12
This course is part of the Functional Academics Program offered to IEP students as recommended by his/her IEP team. Students will learn the basic skills needed to transition to their specific post high school environment. Emphasis is placed on employ ability skills, career development, as well as independent living skills. Students may receive their Science credit by taking this course.

Science
021
Grade 9, 10, 11, 12
This course is part of the Functional Academics Program offered to IEP students as recommended by his/her IEP team. Students will learn basic science skills. Students will receive their science credit by taking this course.

Topics in Science
055
Grade 9, 10, 11, 12
This course is designed for students whose IEP team recommends Emotional Support small group instruction with modifications to the regular education curriculum. Concepts covered in this course include units in biology, earth science and physical science.

MATHEMATICS COURSE OFFERINGS AND SEQUENCES

The flowchart below lists the standard progression of courses within the Mathematics Department. Courses should be chosen from the column, which most suits a student's goals and needs. Students should review the course descriptions to determine which courses are right for their goals, grade level, and grades in previous courses. Students should make sure they meet the prerequisites, listed in the course descriptions, for the courses they want and that they obtain any teacher recommendations needed. Most mathematics courses are offered in both the fall and spring, except for the advanced placement courses, which meet all year and are worth two credits-one math credit and one elective credit.

The table below describes a typical path for each of the tracks offered at the High School. There are opportunities for students to cross tracks if an interest is presented, academic prerequisites are met and teacher recommendations are obtained. Students should consult their guidance counselor and their math teacher to learn more about the requirements to switch into a more challenging track.

Career Prep	College Prep	Honors/Advanced Placement
Pre-Algebra A Pre-Algebra B Introduction Algebra A Introduction Algebra B	CP Algebra 1A CP Algebra 1B	Honors Algebra* Honors Geometry/Trigonometry
Introduction Algebra C (Fall)	CP Algebra 2	Honors Advanced Algebra 2
Keystone Algebra Career Algebra 2 Career Geometry Algebra 3/Trigonometry	CP Geometry/Trigonometry	Honors Math Analysis
	CP Precalculus CP Statistics CP Calculus	AP Calculus AB or AP Calculus BC or AP Statistics

*If Algebra was not completed in middle school

Recommendations:
Introductory Algebra A is only offered in the first semester. Students who enroll in Introductory to Algebra A must enroll in Introductory Algebra B in the second semester and then Introductory Algebra C in the fall semester of the following year.

CP Algebra A is offered only in the first semester and must be followed by CP Algebra B in the second semester of the same school year.

It is recommended that CP Geometry/Trigonometry be completed before taking the SAT.

MATHEMATICS COURSE DESCRIPTIONS

Student placement in Math classes will be based on the following criteria, unless specifically stated in the course description:

- Grade from previous class with an emphasis on categories that reflect mastery of content.
- Performance on assessments, such as midterms and final exams.
- PSSA scores from previous years.
- Keystone Algebra I exam scores from previous years.
- PVAAS projections of proficiency levels
- Teacher recommendation

CAREER PREP MATHEMATICS COURSES

Pre-Algebra-A
216
Grade 9, 10
This is the first semester course of a year-long course designed for students who need to develop Pre-Algebra skills. Topics include Algebra Expressions, Integers, rational numbers, linear equations with one variable, and applying algebra to geometry. Pre-Algebra – B, the second half of the Pre-Algebra course, must be selected as a second semester course for students who choose Pre-Algebra – A. Students will be introduced to algebraic concepts and apply mathematical concepts to solve practical problems. The pace of this class is designed to provide significant opportunities for practice and review of new concepts.
Additional information: Students who completed Pre-Algebra - A in the fall and Pre-Algebra - B in the spring will receive one math credit and one elective credit.

Pre-Algebra–B
217
Grade 9, 10
This course is designed for ninth and tenth grade students as the second half of Pre-Algebra, to be taken in the spring semester, after having completed Pre-Algebra -A in the fall. Topics include: Linear equations, linear inequalities, systems of equations, functions, and data analysis.
Additional information: Students who pass both Pre-Algebra-A and Pre-Algebra-B can then select Introductory Algebra A and Introductory Algebra B as their next math courses**.**

Introductory Algebra A
172
Grade 9, 10 (fall semester only)
This course is designed for students who need to strengthen their mathematical skills and allows high school students to develop a solid mathematical foundation in Algebra 1. Students are provided with significant opportunities for practice and review throughout the course. Topics include real numbers and the language of Algebra, solving linear equations, and graphing relations and functions. Emphasis will be placed on applications. Students taking Introductory Algebra A must select Introductory Algebra B as a second semester course and Introductory Algebra C as a fall course in the next school year.
Additional information: Students who completed Intro Algebra A in the fall and Intro Algebra B in the spring will receive two math credits.

Introductory Algebra B
176
Grade 9, 10 (spring semester only)
Prerequisite - Introductory Algebra A
This course is designed for students who need to strengthen their mathematics skills and allows high school students to develop a solid mathematical foundation in Algebra 1. Students are provided with significant opportunities for practice and review throughout the course. Topics include analyzing linear equations, solving linear inequalities, data analysis, and solving systems of equations and inequalities. Emphasis will be placed on applications. Students taking Introductory Algebra B must select Introductory Algebra C as a fall course in the next school year.
Additional information: Students who completed Intro Algebra A in the fall and Intro Algebra B in the spring will receive two math credits.

Introductory Algebra C
1761
Grade 10, 11
Prerequisite - Introductory Algebra B
This course is designed for students as the last semester of an Algebra I course. Topics include probability, polynomials, factoring, radicals, and Keystone Exam review. Emphasis will be placed on applications and constructed response problems. At the end of the semester, students will be taking the State Keystone Exam. Students who pass Introductory Algebra A, Introductory Algebra B, and Introductory Algebra C, and get proficient/advanced on the Keystone Exam can then select an Algebra II course or Geometry course.
Additional information: Students will be required to take the Algebra I Keystone Exam at the conclusion of this course.

Algebra II
1732
Grade 10, 11
Prerequisite – Introductory Algebra C
This course in the career prep sequence is for students who have passed Introductory Algebra A, B, and C. Topics include Linear Programming, Quadratic Functions and Relations, Polynomials and Polynomial Functions, Radical Functions, and Exponential Functions. Emphasis will be placed on applications. A graphing calculator would be helpful.

Geometry
181
Grade 10, 11
This course in the career prep sequence is for students who have passed Introductory Algebra A, B, and C. Topics from algebra will be reviewed, expanded and applied to study lines, polygons, triangles, trigonometric functions, circles, solids, and area. Emphasis is placed on application rather than on proof.

Algebra III - Trigonometry
180
Grade 11, 12
This course in the career prep sequence and should be elected by students considering vocational schools. This course could also be chosen by students considering college programs, which do not require calculus, or by students who need to improve their math skills before taking CP Precalculus. This course emphasizes radical expressions, exponential functions, applications of trigonometry, probability and possible outcomes, and conic sections. A graphing calculator is recommended.

Keystone Algebra
1801
Grade 11
This course is designed for juniors who have completed an Algebra I course who have not yet demonstrated mastery on Keystone Algebra content. All pieces of eligible content associated with Keystone Algebra will be reviewed in this course to fill in knowledge gaps. Students taking math classes beyond Algebra I will need to have a solid foundation in these skills. Students will have opportunities to take practice exams to prepare for success.
Additional Information: Students will be required to retake the Algebra I Keystone Exam at the conclusion of this course.

COLLEGE PREP MATHEMATICS COURSES
Students must earn a 78% or better in their current college prep course to enroll in the next college prep level course. Students enrolling in a College Prep Course from a previous Career Prep course, must have earned an A and have teacher recommendation to make this request.

College Prep Algebra I-A
175
Grade 9
This course is designed for students in the college prep sequence. CP Algebra IA includes operations with real numbers, linear equations, relations, functions, and linear inequalities. Applications of algebraic topics are emphasized in this course. A graphing calculator is strongly recommended.
Additional information: Students who complete CP Algebra I-A in the first semester and CP Algebra I-B in the second semester will receive one math credit for Algebra I and one elective credit.

College Prep Algebra I-B
1751
Grade 9
This course is designed for students in the college prep sequence. CP Algebra IB includes systems of linear equations and inequalities, polynomials, factoring, quadratic functions, probability and data analysis. Applications of algebraic topics are emphasized in this course. A graphing calculator is strongly recommended.
Additional information: Students who complete CP Algebra I-A in the first semester and CP Algebra I-B in the second semester will receive one math credit for Algebra I and one elective credit. Students who complete CP Algebra I-A and CP Algebra I-B will be required to take the Algebra I Keystone Exam at the conclusion of this course.

College Prep Algebra II
179
Grade 10
This is the second math course in the college prep sequence. It is recommended for all students considering a four-year college program. Topics include Linear Programming, Quadratic Functions and Relations, Polynomials and Polynomial Functions, Radical Functions, Exponential Functions and Rational Expressions and Equations.. A graphing calculator is strongly recommended.

College Prep Geometry/Trigonometry
182
Grade 10, 11, 12
This course is the third math course for all students who are considering a four-year college program. This course should be completed before taking the Scholastic Aptitude Test. This course includes proof, lines, triangles, polygons, circles, triangular and circular trigonometry, and topics from coordinate geometry.

College Prep Precalculus
185
Grade 11, 12
This is the fourth course in the college prep sequence. It is recommended for all students considering a four-year college program. This course extends the study of algebraic and trigonometry techniques necessary for calculus. A graphing calculator is strongly recommended.

College Prep Statistics
187
Grade 11, 12
This course introduces and explores the major concepts of data analysis, specifically exploring and describing univariate and bivariate data graphically and numerically, experimental design, anticipating patterns through probability and simulation, and statistical inference procedures. It is recommended for any student who will need to take a Statistics course at the college level. Calculators will be used to analyze data throughout the course. A graphing calculator is strongly recommended.

College Prep Calculus
171
Grade 11, 12
This course is designed for students entering college programs which require calculus. It is especially designed for those entering engineering, math, science, business, or professional studies. It includes topics typically found in a first semester calculus course including limits, derivatives and integrals. A graphing calculator is strongly recommended.

HONORS/ADVANCED PLACEMENT MATHEMATICS COURSES:
Students must earn a 78% or better in their current honors course to enroll in the next honors level course. Students enrolling in an Honors course from a previous College Prep Course, must have earned an A and have teacher recommendation to make this request.

Honors Algebra 1
178
Grade 9
Students who successfully completed Algebra 1 in middle school are not required to take this course. This course includes operations with real numbers, linear equations, relations and functions, linear inequalities, systems of linear equations and inequalities, polynomials, factoring, quadratic functions, probability and data analysis. Students will be expected to apply algebraic topics to real life situations in this course. A graphing calculator is strongly recommended.
Additional information: Students who successfully complete this course will be required to take the Keystone Algebra exam at the conclusion of the course.

Honors Geometry/Trigonometry
183
Grade 9, 10
This course uses algebra skills and proofs to study logic, lines, angles, triangles, polygons, circles, and both triangular and circular trigonometry. A graphing calculator is recommended.

Honors Advanced Algebra II
177
Grades 9 and 10
Topics include graphing special functions, linear programming, quadratic functions and relations, polynomials and polynomial functions, inverses, radical functions and relations, exponential functions and relations, and rational expressions and equations. A graphing calculator is recommended.

Honors Math Analysis
184
Grade 10, 11
Topics include trigonometric functions, polynomial functions, exponential functions, logarithmic functions, special functions, inequalities, transformations, conic sections, and limits. A graphing calculator is strongly recommended.

Advanced Placement Calculus AB
169
Grade 11, 12
Calculus AB is a course in single-variable calculus that includes limits and continuity, techniques and applications of the derivative, techniques and applications of the definite integral, and the Fundamental Theorem of Calculus. It is equivalent to a semester of calculus at most colleges and universities. Algebraic, numerical, and graphical representations are emphasized throughout the course. Students who score high enough on the exam may be able to obtain up to four credits from some universities. A TI-84 graphing calculator is recommended. Students who complete this class will earn two weighted credits - one weighted math credit and one weighted elective credit. In order to earn AP weighted credit, students must take the Advanced Placement examination in May.

Advanced Placement Calculus BC
189
Grade 11, 12
Calculus BC is a course in single-variable calculus that includes all the topics of Calculus AB plus additional topics in differential and integral calculus including advanced integration techniques, parametric equations, polar calculus, introductory vector functions, and infinite series. The course is equivalent to two college-level calculus courses at most colleges and universities. Algebraic, numerical, and graphical representations are emphasized throughout the course. Students who score high enough on the AP exam may be eligible for up to eight credits from most universities. A TI-84 graphing calculator is recommended for this course. Students who complete this class will earn two weighted credits - one weighted math credit and one weighted elective credit. In order to earn AP weighted credit, students must take the Advanced Placement examination in May.

Advanced Placement Statistics
215
Grade 11, 12
A.P. Statistics is a course that introduces students to the major concepts of data analysis, specifically exploring and describing univariate and bivariate data graphically and numerically, experimental design, anticipating patterns through probability and simulation, and statistical

inference procedures. The focal point of the course is drawing conclusions based on a variety of inference techniques. Students who score high enough on the exam may be able to obtain up to 4 credits for an introductory college statistics course at some universities. A TI-84 graphing calculator is recommended for this course. Students who complete this class will earn two weighted credits - one weighted math credit and one weighted elective credit. In order to earn AP weighted credit, students must take the Advanced Placement examination in May.
Note: Students interested in taking AP Statistics must have earned at least a C in Honors Math Analysis OR an A in CP Stat with teacher recommendation or an A in CP Precalculus with teacher recommendation.

MUSIC COURSE DESCRIPTIONS

Student placement in Music classes will be based on the following criteria, unless specifically stated in the course description:

- Successful completion of an introductory class or previous level class with a minimum grade of 85%.
- Performance on local assessments, such as midterms, performance evaluations and final exams.
- Participation in class activities
- Teacher recommendation

PERFORMANCE ENSEMBLES

Grade 9, 10, 11, 12
Prerequisite - Permission of Instructor
This course is for students who wish to participate in band, orchestra or chorus or any combination of those three. Membership in the performance organizations is by the approval of the director, and students must perform for the organization director(s) so their level of instrument/voice proficiency can be assessed.
Additional information: Students must elect one area of Performance Ensemble (Band, Orchestra, and Chorus) but are permitted to participate in more than one area. Additional Performance Ensembles will be notated in the comments area of the report card and under Activities on official transcripts.

Band
880
Grade 9, 10, 11, 12
Students who enroll in band must play a band instrument (brass, woodwind, or percussion). The first marking period focuses on marching band repertoire and activities, and the remaining marking periods emphasize wind ensemble literature. Enrolled students will participate in both concert band and marching band activities that include: summer band camp, weekly evening rehearsals in the fall, weekend performances, and parades. Exceptions to marching band participation will be made on a case-by-case basis due to major scheduling conflicts. Evaluative criteria include student attendance at school scheduled performances and rehearsals, classroom participation, performance techniques, and playing exams.

Honors Band
865
Grade – 10, 11, 12
Prerequisite - Minimum of one year in Music Ensemble (Band, Orchestra, Chorus) with a grade of 90% or higher and with permission of instructor
Students will fulfill the requirements of performance ensemble, and will be required to meet the following additional requirements: 1. Students must prepare an honors audition solo. 2. Students must prepare and audition for County and/or District level ensembles. 3. Students must complete a topic/research paper. 4. It is recommended that students acquire private instruction. 5. Students must perform in one recital each school year.

Orchestra
881
Grade 9, 10, 11, 12
Prerequisite - Permission of instructor to participate
Students who enroll in orchestra must play a string instrument (violin, viola, cello, or double bass).Emphasis is placed on string ensemble literature, chamber ensemble literature and standard orchestral literature. Evaluative criteria include student attendance at school scheduled concerts, classroom participation, performance techniques and playing exams. Places for woodwind, brass and percussion players are determined by audition as needed. These players should not sign up for orchestra as a course until they have completed an audition and are notified by the high school orchestra director of their acceptance into the orchestra. Auditions will take place at the start of the school year.

Honors Orchestra
866
Grade 10, 11, 12
Prerequisite - Minimum of one year in Music Ensemble (Band, Orchestra, Chorus) with a grade of 90% or higher and with permission of instructor
Students will fulfill the requirements of performance ensemble, and will be required to meet the following additional requirements: 1. Students must prepare an honors audition solo. 2. Students must prepare and audition for County and/or District level ensembles. 3. Students must complete a topic/research paper. 4. It is recommended that students acquire private instruction. 5. Students must perform in one recital each school year.
Additional information: String Requirements: shifting, display knowledge of bowing styles, vibrato

Chorus
882
Grade 9, 10, 11, 12
Prerequisite - Permission of instructor to participate. Pitch matching is required.
Students who enroll in this course should have a sincere interest in developing their skills as a musician and vocal student. Students who enroll in chorus will have the opportunity to develop vocal skills, musical potential and proficiency through rehearsal techniques, choral literature, sight-singing, basic theory and performances. Evaluative criteria will include student attendance at mandatory rehearsals, school scheduled concerts, classroom participation, rehearsal/ performance techniques and concert etiquette.

Honors Chorus
892
Grade 10, 11, 12
Prerequisite - Minimum of one year in Music Ensemble (Band, Orchestra, Chorus) with a grade of 90% or higher and with permission of instructor
Students will fulfill the requirements of performance ensemble, and will be required to meet the following additional requirements: 1. Students must prepare an honors audition solo. 2. Students must prepare and audition for County and/or District level ensembles. 3. Students must complete a

topic/research paper. 4. It is recommended that students acquire private instruction. 5. Students must perform in one recital each school year.
Additional information: Vocal Requirements: demonstrate sight-singing ability

Girls Chorus
883
Grade 9, 10, 11, 12
Prerequisite - Permission of instructor to participate. Pitch matching is required.
This chorus is open to any girl in grades 9-12 but is geared towards incoming freshmen and those new to choral ensembles. Students will explore music from various cultures and genres and learn the basics of solfege as a tool to read music. Students will also explore the basics of writing harmonies and arranging popular music for the voicing of a girl's ensemble. This course will meet every day during the second semester.
Additional information: Incoming new students must be auditioned by the director for placement in the proper ensemble. If students participated in middle school chorus, the middle school director will recommend placements.

Manor Singers
859
Grade 10, 11, 12
This is a select group, designed for vocal students with exceptional singing/musical abilities. The Manor Singers will be auditioned in February of each school year to fill spots left by those who will graduate or are unable to participate the following school year. The audition will consist of a prepared piece, a sight-reading selection, and a choral excerpt. This group will study more difficult works in preparation for community performances throughout the school year, as well as for the Winter and Spring Choral Concerts.

MUSIC ELECTIVES

Class Piano I
851
Grade 9, 10, 11, 12
This course is designed to teach the beginning high school student how to play the piano as well as provide additional knowledge about the history of the piano, sound production, famous composers of piano music, and famous piano performers. Reading music is essential to this course. There are a number of supplemental activities, which include musical videos, listening examples, and a research paper. The final for this course is a recital/concert where students choose three songs from the semester and perform for their peers and teachers.
Additional information: Class size is limited to the number of available pianos.

Class Piano II
852
Grade - 10, 11, 12
Prerequisite – Successful completion of Piano I with a grade of 85% or higher.
This course is a continuation of Class Piano I. Students will study more advanced music, performance repertoire, and elements of music theory. Throughout the course, students will

explore the Baroque, Classical, Romantic and Modern eras and perform pieces from each time period. There are bi-weekly recitals where students will perform their piece of study for their classmates. The final exam for this course consists of a recital and written exam on music theory components studied over the course of the semester.
Additional information: Class size is limited to the number of available pianos. Students in grade 9 may only enroll with permission from the instructor.

Class Piano III
856
Grade 10, 11, 12
Prerequisite – Successful completion of Piano II with a grade of 85% or higher.
This course will follow the same structure and timeline as Piano II but focuses on more advanced performance techniques. Students will perform legitimate solo piano repertoire for weekly performance grades and bi-weekly recitals. The final exam for this course consists of a recital and a written exam on music theory components studied over the course of the semester.
Additional information: Class size is limited to the number of available pianos.

History of Rock
887
Grade 9, 10, 11, 12
Students will study this popular music form from its roots in Rhythm and Blues, through the Rock-n-Roll explosion of the 50's and early 60's, the development of the psychedelic counterculture, the classic rock styles of 70's to the MTV video 80's. This course will examine rock 'n' roll music – its historical and musical rise to cultural dominance, exploring issues of race, gender, and class amidst the rapidly changing social, cultural, economic, and political landscape of mid-to-late 20th century.

Guitar I
888
Grade 9, 10, 11, 12
Guitar I is an elective course for students with little or no experience on the guitar. Students will learn open chords, power chords, movable chords, single note (melody) and improvising through various styles of rock, pop, folk, and classical music. This course also teaches music fundamentals and theory with emphasis on learning to read standard music notation. Nylon string acoustic guitars are supplied for student to use in school.
Additional Information: Class size is limited to the number of available guitars.

Guitar II
889
Grade 10, 11, 12
Prerequisite – Successful completion of Guitar I with a grade of 85% or higher.
Guitar II is a performing arts class designed as an extension for those students who have successfully completed Beginner Guitar. Emphasis is placed on reading musical notation due to the advanced concepts and solo/ensemble performances. An important component of this course is the preparation and presentation of student work in public performance. Public performance

opportunities will serve as evaluators of student progress and mastery level of curricular materials. Note: Nylon string acoustic guitars are supplied for student to use in school.
Additional information: Students in Grade 9 may enroll in the course with instructor permission.

Music Technology: Creating and Producing
895
Grade 10, 11, 12
This course will survey music technology topics including: copyright law, live sound production, music sequencing, MIDI, and digital audio. Students will engage in project-based learning specific to each topic. Reading music is not a prerequisite for this course. Music Technology will provide students with training and instruction on technology in music through opportunities to create, collaborate, and experiment with hardware and software.

PHYSICAL EDUCATION, HEALTH and SAFETY EDUCATION COURSE OFFERINGS AND SEQUENCES

The flowchart below lists the standard progression of courses within the Physical Education, Health, and Safety Education Department. Students should review the course descriptions to determine which courses are right for their goals, grade level, and grades in previous courses. Students should make sure they meet the prerequisites, listed in the course descriptions, for the courses they want and that they obtain any teacher recommendations needed.

As part of their graduation requirement, students must earn a credit in Physical Education/Health 9 and Physical Education/Safety Education 10. If a student is scheduled for band, orchestra, or chorus cycle days 1, 3, and 5, they may schedule their physical education classes on cycle days 2, 4 and 6.

Student placement in physical education classes beyond grades 9 and 10 will be based on the following criteria, unless specifically stated in the course description:

- Successful completion of an introductory or previous level course with a minimum grade of 80%.
- Determining grade will not include grading categories that do not reflect assessment, such as homework or extra credit.
- Performance on local assessments, such as midterms and final exams.
- Participation in class activities

Grade 9	Grade 10	Grade 11	Grade 12
Physical Education/Health 9	Physical Education/Safety Education 10	Physical Education/Anatomy	Physical Education/Anatomy
Physical Education/Health 9 - full year course with performance ensembles	Physical Education/Safety Education 10 - full year course with performance ensembles	Fitness Training/Current Health Issues I	Fitness Training/Current Health Issues I
		Sports Medicine and Lifetime Sports	Sports Medicine and Lifetime Sports
		Women's Health and Self Defense	Women's Health and Self Defense

Open Campus Classes

Open Campus course descriptions can be found in Appendix A of the Course Selection Guide.

PHYSICAL EDUCATION, HEALTH, AND SAFETY EDUCATION COURSE DESCRIPTIONS

PHYSICAL EDUCATION REQUIRED COURSES

Physical Education/Health 9
190
Grade 9
This course is required of all ninth grade students. The class rotates with three health classes and three physical education classes per cycle. The health segment consists of Wellness and Stress Management, Substance Abuse, Human Growth and Development, and CPR Training. Emphasis is concentrated on decision-making skills and development of sound health practices. The physical education segment consists of fitness activities, team sports and lifetime carry-over activities. When weather permits, the activities are conducted outside. All activities are coeducational and emphasis is placed on exposure to and interest in activities for use in developing a wellness program for the future of the student.

Physical Education/Health 9
194
Grade 9
This is the full year course that alternates with the full year performance music classes. Same course description as Physical Education/Health 9 - 190

Physical Education/Safety Education 10
192
Grade 10
This course is required of all tenth grade students. The safety education segment consists of 22 classes of instruction of the proper use of an automobile, how the vehicle functions and safety precautions needed for the welfare of pedestrians as well as passengers. It includes buying, financing, maintaining and insuring the motor vehicle; natural and manmade laws; hazardous and emergency situations and misuse of alcohol and drugs with special emphasis on their effects on the driver. Concentration on decision-making skills is also a significant focus of this course. The physical education segment consists of fitness activities, team sports and individual activities with carry-over importance. All activities are coeducational and conducted outside when weather permits. Emphasis during activities is centered on cooperative team efforts, sportsmanship and responsible use of leisure time. A lifestyle of wellness and importance of exercise is stressed during this course.

Physical Education/Safety Education 10
195
Grade 10
This is the full year course that alternates with performance music courses. Same course description as Physical Education/Health 10 – 192.

Adapted Physical Education/Health 9
191
Adapted Physical Education/Safety Education – 10
193
Grade 9, 10
Prerequisite: Note from Physician
The adapted physical education classes are self-directed programs that enable students who cannot participate in the regular physical education program to develop within their special limitations. A physician must recommend a student for these programs.

Open Campus Health Education
1941
Grade 11, 12
.5 credit
An examination of mental, emotional, physiological and social health issues of young adults occurs in this course. Emphasis on healthful decision-making, long- and short-term goal setting, and looking into the future of one's quality of life will be discussed, debated and researched. Students will be engaged in learning aspects of human anatomy and physiology related to problems associated with disease prevention and how to determine and access good healthful information based on reliable media and other associated sources of information. This course is part of the High School open-campus initiative.

PHYSICAL EDUCATION ELECTIVE COURSES
Students wishing to enrollment in Physical Education Elective classes must meet the following criteria, unless specifically stated in the course description:

- Minimum grade of 80% in both 9th and 10th grade required courses.
- Maintain a B in all Health and Physical Education elective courses.

Physical Education/Anatomy
199
Grade 11, 12
This elective course is recommended for those students who are interested in studying physical education, physical therapy, nursing, art or any health care related field where knowledge of human anatomy and physiology would be helpful. All systems of the human body are studied. It is also recommended that this course be taken prior to Sports Medicine. The physical education segment consists of activities that can be used in developing a wellness program in the future. When weather permits, the activities are conducted outside and all activities are coeducational.
Additional information: Students desiring to take a second PE elective must earn a B in their previous PE elective class.

Fitness Training/Current Health Issues I
200
Grade 11, 12
This elective course is designed to bring about, by means of progressive resistance exercise, changes in the body as manifested in increased strength, endurance and flexibility. There will also be an effort made to amplify the student's knowledge and develop informed attitudes regarding

nutrition, drug use/abuse, other health-related issues and the importance of commitment to achieving and maintaining total fitness.
In general, the course is rather demanding in terms of physical work, but very satisfying for those interested in improving their physical fitness.
Additional information: Students desiring to take a second PE elective must earn a B in their previous PE elective class.

Fitness Training/Current Health Issues II
204
Grade 11, 12
Prerequisite: Minimum grade of a B in Fitness Training/Current Health Issues I
This elective course is designed for students who have successfully completed Fitness Training/ Current Health Issues I and wish to continue work on improving physical fitness and increasing knowledge of current health issues. Continued work on a personal fitness program that was begun in Fitness I will bring about increases strength, endurance and flexibility. Students will continue to explore and amplify their understanding of topics relating to health and wellness concerns that may impact their adult lives. Additional information
Students desiring to take a second PE elective must earn a B in their previous PE elective class.

Sports Medicine and Lifetime Sports
201
Grade 11, 12
This elective course consists of prevention, evaluation, treatment and rehabilitation of injuries, nutrition and legal issues. Special emphasis will be placed on sports related injuries. Cardiopulmonary resuscitation and first aid will be covered in the curriculum in addition to careers found in sports medicine. In the activity portion of the course, students will investigate and participate in activities that carry over into their adult lives. Some activities may require a fee at the expense of the student.

Women's Health and Self Defense
203
Grade 11, 12
This elective course consists of three blocks of women's health issues and three blocks of self-defense in each cycle. The health portion is devoted to important issues facing young women as well as topics of concern as young women age. The self-defense portion is devoted to preparing the students to avoid potential dangerous situations and to acquire physical skills to defend themselves in case of a physical assault. Students should be aware that physical contact and physical fitness are a part of this course.
Additional information: Students desiring to take a second PE elective must earn a B in their previous PE elective class.

SCIENCE COURSE OFFERINGS AND SEQUENCES

The flowchart below lists the standard progression of courses within the Science Department. Biology is the only mandated science course. However, other courses are offered that fulfill science requirements. The complete list of courses can be found under Additional Opportunities. Students should review the course descriptions to determine which courses are right for their goals, grade level, and grades in previous courses. Students should make sure they meet the prerequisites listed in the course descriptions for the courses they want and that they obtain any teacher recommendations needed.

Recommended Grade	Career Prep	College Prep	Honors	Advanced Placement
Grade 9	Earth Science	CP Principles of Science (prerequisite for CP Biology)	Honors Earth Science	
Grade 10	Biology A and B	CP Biology	Honors Biology	AP Biology
Grade 11 & 12 Must Choose 2 of 3	Applied Science Chemistry Freshwater and Marine Ecology Forensics	CP Chemistry CP Physics I CP Freshwater and Marine Ecology CP Earth Science	Honors Chemistry Honors Physics I Honors Physics II Honors Intro to Human Physiology Open Campus Honors Astronomy	AP Physics I & II AP Biology AP Chemistry AP Environmental Science

Recommendations

College Prep and Honors students who are planning to take an AP science courses are encouraged to take more than one science course each year beginning with their sophomore year. Only under special circumstances should freshmen consider taking more than one science course. Consult your guidance counselor for additional advice. All students are encouraged to take more than four science courses during their high school career. Freshwater and Marine Ecology, Forensic Science, Open Campus Honors Astronomy, and Honors Intro to Human Physiology are recommended for enrichment either after completing the typical Earth Science, Biology, Chemistry, Physics sequence, or concurrently with another science course. Quarter credit Open Campus courses are also available to interested students.

Additional Opportunities
Freshwater and Marine Ecology
Forensic Science
Honors Intro to Human Physiology
AP Biology
AP Environmental Science
AP Chemistry
AP Physics I and II
Open Campus Geology
Open Campus Honors Astronomy
Open Campus Introduction to Microbiology
Open Campus Oceanography
Open Campus Introduction to Biochemistry
Open Campus Zoology
Concepts of Biotechnology (Agriculture)
Veterinary Science (Agriculture)
Honors Veterinary Science (Agriculture)

Open Campus Classes
Open Campus course descriptions can be found in Appendix A of the Course Selection Guide.

SCIENCE COURSE DESCRIPTIONS

Student placement in Science classes will be based on the following criteria unless specifically stated in the course description. These criteria are guidelines for parents and teachers to use when determining a student's eligibility for their next course.

- Grade from previous class and students entering the high school Science Department from middle school are placed at a specific academic level by reference to their current science grade on assessments and their teacher's recommendation. Students may remain at their current academic level by successful completion of their current science class with a minimum grade of 70%.
- Determining grade will not include grading categories that do not reflect assessment, such as homework or extra credit.
- Performance on local assessments, such as unit tests, common lab assessments (CLA), midterms, and final exams.
- PSSA scores from previous tests
- PVAAS projections of proficiency levels
- Teacher recommendation

Earth Science
100
Grade 9
Prerequisite: Middle school teacher recommendation
This semester course is a general course in Earth Systems Science for ninth grade students who do

not possess a strong aptitude in science or math. Concepts in physical geology, hydrology, earth-sun relationships, and weather are studied. Emphasis is placed on developing independent thinking, learning without reliance on a lecturing teacher, and problem solving skills using Earth Science as the vehicle for utilizing these skills. Web based resources such as Turnitin, Google Classroom, Google Drive, and Moodle are foundations for this course. This course is recommended for students who intend to enter the working world to pursue technical or business training.
Additional information: One Common Lab Assessment will be completed.

College Prep Earth Science
101
Grade 11
This semester course in Earth Systems Science is recommended for college bound students who have successfully completed the Biology Keystone Exam and have a strong aptitude in science or math. In-depth analysis, problem solving, and project-based assignments emphasize concepts in physical geology, hydrology, earth-sun relationships, and meteorology. This course is designed for all students planning to attend college regardless of their desired major. This course will have significantly less lecture time than a career level course, more independent work in reading, writing and critical thinking, less time spent reviewing for longer tests, and 10-30% more unannounced quizzes. Additionally, assessment via student-created videos will play a greater role in grading. Tectonic Plate Spreading Rates and the Surveying labs are examples of classroom activities done in addition to those in the 100 level course.
Additional information: One Common Lab Assessment will be completed.

College Prep Principles of Science
1011
Grade 9
Prerequisite: Middle school teacher recommendation. College Prep level 9th grade students will take this course in preparation for College Prep Biology.
This one-semester course is offered to freshman intending to attend college. All College Prep level freshmen are expected to take this course. It is designed to continue onward from the middle school Sciences curriculum with little review of past concepts building upon the knowledge base already established. Students are expected to possess a working knowledge of previous studies. The primary units of study will include: Scientific Inquiry and Processing Skills, Independent Learning, Physical Science, Chemical Basis of Life, and Biological Sciences with emphasis on preparing the student for success on the Biology Keystone Exam.
Additional information: One Common Lab Assessment will be completed.

Honors Earth Science
102
Grade 9, 10, 11, 12
Prerequisites: Middle school teacher recommendation and student has met stated academic level of criteria in middle school to enroll.
The primary emphasis of this course is on learning how to learn (metacognition) in order to prepare the student for future success in high school science. Students strive to recognize pertinent aspects of metacognition and incorporate that knowledge into their personal learning style using

Earth Science as the vehicle to achieve that result. This course requires higher level thinking skills, mathematics such as graph interpretation/extrapolation, and class participation. Honors Earth Science involves more depth and breadth of the content with discussions in astronomy, geology, and meteorology. In addition to possessing a solid background in math and science, a strong motivation and desire to learn independently and think critically are necessary in order to be successful. The two mandatory Common Lab Assessments are completed with minimal input from the teacher. There is a further reduction in lecture time from College Prep level courses with increased reliance on notes obtained from other sources, Moodle references, Google Classroom posts, and other online work done to facilitate personalized and collaborative learning. Increased emphasis is placed on developing independent thinking, learning without reliance on a lecturing teacher, and problem solving skills. Much more class time will be devoted to classwork or discussion than notetaking. Homework such as blog entries and reviews can be anticipated daily. Scientific based writing skills applied to formal lab reports will be stressed. In this Honors level course. Greater appropriate reliance on electronic devices, including but not limited to laptop computers, tablets, smart phones, etc. is encouraged while simultaneously the googling of answers is forbidden. Little in-class time is spent reviewing while reference to the course Moodle page is emphasized. Honors tests are much longer, time restricted, and detail oriented with significantly more essay questions designed to probe deep understanding. Examples of additional class work include independent completion of the Earthquake Tension Lab, Mt. Capulin mapping problem, and adiabatic lapse rate determinations.

NOTE: Students earning an A average on assessments in this class are eligible to take AP Biology in place of Honors Biology during their sophomore year. Students should consider their future course schedules and to speak to their Earth Science teacher or Guidance Counselor for more details.
Additional information: Two Common Lab Assessments will be completed.

Biology A and B
103 and 1031
Grade 10
2 Science Credits

This two credit, yearlong course is a study of Life Science. This course includes topics in the nature of science, basic life chemistry, cells, genetics and ecology. It is a Keystone Exam preparatory class.
Additional information: One Common Lab Assessment or portions of one may be completed at the teacher's discretion.

College Prep Biology
104
Grade 10
Prerequisite: CP Principles of Science

This course in Biology is for students with a demonstrated aptitude in math and science. This course is recommended for the college-bound student who intends to major in something other than a scientific field. Course material includes in-depth studies of the nature of science, basic nature of life, life chemistry, cell structure, cell reproduction, genetics and ecology. Less time is

spent reviewing in order to maximize the amount of time spent on content detail such as structures, functions, and biochemistry. This class places a greater emphasis on independent/partner/group work for completing written work and lab analyses. Tests at the College Prep level require more pre-question reading and tend to have more application style questions requiring a greater degree of analysis with the conclusions reached relating strongly to the concepts being tested. Test questions tend to be more conceptual in nature as opposed to direct factual recall. It is a Keystone Exam preparatory class.
Additional information: One Common Lab Assessment will be completed.

Honors Biology I
105
Grade 9, 10

This course in Biology is for students with a high aptitude for science and math. It is designed for the college-bound student who plans to major in a scientific field. Topics include the nature of life, biochemistry, cell structure, cell reproduction, ecology, and genetics. Scientific technical writing skills applied to formal lab reports will be stressed. Homework can be expected every night with this course. In addition, reports on three current events per marking period are required as opposed to none in the CP Biology course. There are more tests and quizzes in this course with an average of two per unit. Tests typically have additional multiple-choice questions and more closed response questions. Additionally, more out-of-class (long term, individual) work is assigned over vacation time as well. Prior to exams, a 2-4 page review guide will be submitted to the instructor. It is a Keystone Exam preparatory class.
Additional information: Two Common Lab Assessments will be completed. There is an additional independent work requirement over the Thanksgiving, winter, and spring breaks.

Honors Introduction to Human Physiology
106
Grade 10, 11, 12
Prerequisites: Students must have a minimum grade of 80% in Honors Biology I or a minimum grade of 90% in College Prep Biology.
Intro to Human Physiology is designed to provide hands on learning for college bound students which will include dissections of mammalian organs that are discussed in class. Topics covered include animal nutrition, circulation and gas exchange, the immune system, endocrine system, nervous system, and the muscle/skeletal system. The class is conducted at an Honors level and students will be expected to work accordingly. Students will be expected to complete dissections. Specific emphasis will be placed on the terminology and knowledge that is required in Health Sciences fields such as nursing, physical training, physician's assistant, and is fundamental for students planning on majoring in pre-med/pre-dental/pre-pharmacy during their undergraduate college years.

Chemistry
107
Grade 10, 11, 12
This is a course in basic chemistry and its applications to the personal and professional lives of people. It is designed to help students think more intelligently about current issues they will encounter that involve science and technology. Students who are going on to a trade school, two-year college, business school, non-science majors in college, or by students not going beyond high school should select this chemistry course.
Additional information: One Common Lab Assessment or portions of one may be completed at the teacher's discretion.

College Prep Chemistry
108
Grade 10, 11, 12
Prerequisites: Students must have a minimum grade of 70% in College Prep Algebra II.
Chemistry is a physical science dealing with the structure, composition and properties of matter along with the changes matter undergoes. Atomic and molecular structure, chemical nomenclature, and reactions as well as the study of gases and solutions are studied through brief lectures, and application activities in the lab. Because of the quantitative aspects of chemistry, a strong math background is highly recommended. This semester course is designed for students who are planning to enter college and take courses in science or technology.
Additional information: One Common Lab Assessment will be completed.

Honors Chemistry I
109
Grade 10, 11, 12
Prerequisites: Students must have a minimum grade of 70% in College Prep Algebra II.
This course is similar in content to College Prep Chemistry, but is more rigorous. There is exposure to the use of some special lab techniques and instrumentation not covered in College Prep Chemistry. Honors Chemistry involves more depth and breadth of content. Scientific technical writing skills applied to formal lab reports will be stressed. There are 2 mandatory Common Lab Assessments. This course requires that the student have a strong background in math and science along with a strong motivation to learn. There is a requirement for more in-depth algebra skills with less reliance on a calculator. The Honors course uses a more advanced textbook from that of the 108 level course. Students are required to maintain a detailed lab notebook. This notebook will contain all CLA and other labs as the lab notebook will prepare students to document data as required by law in industry and advanced academic settings. Students are required to demonstrate a thorough understanding of labs through various types of documentation and questions. More detail on matter, quantum chemistry, VSEPR, polyatomic ion memorization, bonding, and the five common reactions and reaction stoichiometry will be part of the curriculum. Honors exams permit fewer resources or testing aids to be used during assessments. Test questions are more in-depth and cover more details than either the 107 or 108 level courses. Successful completion of the course prepares the student for the A.P. Chemistry course or any introductory college chemistry course.
Additional information: Two Common Lab Assessments will be completed.

Honors Chemistry II
115
Grade 11, 12
Prerequisite: Students must have a minimum grade of 80% in Honors Chemistry I or a 90% in College Prep Chemistry
This course is designed for students planning for a career in the science, medical or engineering fields. A solid foundation in the following Chemistry I topics are necessary for success in Chemistry II: knowledge of ions, nomenclature of inorganic compounds, stoichiometry and bonding. Chemistry II will revisit inorganic compounds, stoichiometry and bonding through a more in-depth study. In addition new topics such as, solutions, chemical kinetics and equilibrium, acids and bases, electrochemistry, organic chemistry and nuclear chemistry will be discussed in Chemistry II.

Applied Science – Physics and Technology
110
Grade 11, 12
This one semester course is designed with **STEM** (Science, Technology, Engineering, and Mathematics) related concepts and principles that allow students to receive one science credit within a PBL (Project Base Learning) environment. This course is a study of the concepts of physics as they relate to things and events that are familiar in the everyday environment. This course is recommended for students who have an interest in the "real-world" science of physics, but do not have a strong aptitude in math. A Physics teacher and an Applied Engineering & Technology will coteach this course. The course will include a heavy project component. Students will have an opportunity to work with Engineering Design briefs and explore solutions to engineering problems as well as the science behind them.
Additional information: A lab fee will be charged. This course will count as a Science Credit.

College Prep Physics I
111
Grade 10, 11, 12
Prerequisite: Students must have a minimum of 70% in CP or Honors Geometry/Trigonometry or current enrollment in CP or Honors Geometry/Trigonometry.
Mechanics is a branch of physics dealing with the study of motion, energy, and their interaction. The course content includes Newtonian Mechanics, which is comprised of Linear and Non-linear motion, Newton's Laws, Energy, Momentum, Rotational Dynamics, and Simple Harmonic Motion. Due to the quantitative nature of physics, a strong math back ground is highly recommended. This course is designed for students who are planning to enter college and take courses in science, engineering, medicine, or technology. A greater emphasis is placed on mathematical problem solving skills. Such as, solving algebraic equations with more variables, solving non-linear equations that produce two answers, and solving systems of equations with multiple variables will be the sort of problems encountered in this course.

Honors Physics I
112
Grade 10, 11, 12
Prerequisite: Students must have a minimum grade of 80% in Honors Geometry/Trigonometry.
This course is similar in content to College Prep Physics of Mechanics, but is more rigorous. The course content includes Newtonian Mechanics, which is comprised of Linear and Non-linear motion, Newton's Laws, Energy, Momentum, Rotational Dynamics, and Simple Harmonic Motion. Honors Physics involves more depth and breadth of content than College Prep Physics. This course requires that the student have a strong background in math and science along with a motivation to learn. An even greater emphasis on math includes solving longer word problems with complex mathematical processes such as the quadratic formula, trigonometric properties mixed with algebraic methods and larger systems of equations with more variables. Scientific technical writing skills applied to formal lab reports will be stressed. In this course, word problems will deliberately not define variable thereby forcing students to use higher order thinking skills to identify them. Lab reports will have more components requiring lengthy discussions to critically analyze the findings.

Honors Physics II
114
Grade 10, 11, 12
Prerequisite: Honors Physics I; Student has met stated academic level criteria to remain at or advance levels.
This course is designed to be a continuation of Honors Physics I where students will investigate Simple Harmonic Motion, Waves, Sound, Light, Optics, Electricity, Magnetism, and Modern Physics. This course requires that he student have a strong background in math and science along with a motivation to learn more than Newtonian Mechanics. Emphasis on math includes solving longer word problems with complex mathematical processes such as the quadratic formula, trigonometric properties mixed with algebraic methods, and larger systems of equations with more variables. Scientific technical writing skills applied to formal lab reports will have more components requiring lengthy discussions to critically analyze the findings.

Freshwater and Marine Ecology
117
Grade 10, 11, 12
Prerequisite: Biology 103/1031 or equivalent; Teacher recommendation.
This course focuses on the living and non-living components of aquatic ecosystems with the intent of enabling students to become informed stewards of the environment. The first half of the course will emphasize the current health status and issues affecting the Susquehanna River and the Chesapeake Bay. Students enrolling in this course should enjoy the outdoors, as a significant amount of time will be spent performing stream studies and learning about our local freshwater systems through field trips. The second half of the course will focus on the delicate balance of biotic and abiotic interactions in the Marine environment. A field trip fee of $10 will be charged for this course.

College Prep Freshwater and Marine Ecology
118
Grade 10, 11, 12
Prerequisite: CP Biology; Student has met stated academic level criteria to remain at or above advanced levels.
This course focuses on the living and non-living components of the aquatic ecosystems with the intent to enable students to become informed stewards of the environment. The first half of the course will emphasize the current health status and issues affecting the Susquehanna River and the Chesapeake Bay. Students enrolling in this course should enjoy the outdoors, as a significant amount of time will be spent performing stream studies and learning about our local freshwater ecosystems through field trips. The second half of the course will focus on the delicate balance of biotic and abiotic interactions in the Marine environment. A field trip fee of $10 will be charged for this course.

Forensic Science
098
Grade 11, 12
Prerequisite: Student has met stated academic level criteria to remain at or advance levels.
The Forensic Science course is designed for students with a curiosity as to how science helps the law. Forensic Science is a multidisciplinary class, pulling in skills from Life Sciences, Chemistry, Physics, Technology, Math, Earth Science, Language Arts and Social Studies. Students will participate in hands on-activities, involved in the process of solving crimes and mysteries with the use of science skills. This semester course is recommended for any student who desires to learn more about how science is used in crime scene investigations. This course requires that students have a strong work ethic, patience to solve problems and puzzles, and a high intrinsic motivation to learn.
Additional information: One Common Lab Assessment will be completed.

Advanced Placement Biology/Technology and Research
119
Grade 10, 11, 12
Prerequisite: Minimum grade of 90% in College Prep Biology or minimum grade of 80% in Honors Biology. Alternately, students earning a 90% average on assessments in Honors Earth Science are eligible to take AP Biology in place of Honors Biology in their sophomore year. Students should speak to their Earth Science teacher or Counselor for more details.
The AP Biology course is designed to be the equivalent of a two-semester college introductory biology course usually taken by biology majors during their first year. AP Biology includes those topics regularly covered in a college biology course for majors. It aims to provide student with the conceptual framework, factual knowledge, and analytical skills necessary to deal critically with the rapidly changing science of biology. Students who complete this class will earn two weighted credits. In order to earn AP weighted credit, students must take the Advanced Placement examination in May.
Additional information: Summer work required. Two Common Lab Assessments will be completed. A lab fee will be charged to replace expendable lab supplies.

Advanced Placement Chemistry/Technology and Research
120
Grade 11, 12
Prerequisite: Students must have a minimum of 90% in College Prep/Honors Chemistry AND a minimum grade of 80% in Honors Math Analysis or minimum grade of 80% in College Prep Precalculus. Physics may be taken in the same year as this course assuming all other prerequisites have been met.
Advanced Placement Chemistry covers the equivalent of a full year college-level course. It is designed to allow students further study in such topics as the property-structure relationships of substances, gases, stoichiometry and solutions as well as delving into the more dynamic studies of thermodynamics, chemical equilibrium and kinetics, as well as electrochemistry and organic chemistry. The full year time frame allows more time for the application and exploration of new concepts in the laboratory, as well as time to develop proper lab techniques including data collection, analysis and presentation in formal reports. Technical writing skills applied to formal lab reports will be stressed. Students who complete this class will earn two weighted credits. In order to earn AP weighted credit, students must take the Advanced Placement examination in May.
Additional information: Summer work required. Two Common Lab Assessments will be completed. A lab fee will be charged to replace expendable lab supplies.

Advanced Placement Environmental Science
093
Grade 11, 12
Prerequisite: Students must have a minimum grade of 80% in any two Honors science courses or a minimum grade of 90% in any two College Prep Science courses.
AP Environmental Science is an applied, interdisciplinary science course, which integrates aspects of biology, geosciences, chemistry and physics to understand the earth and the human impact on it. The goals of this course are to provide students with the scientific principles, concepts and methodologies required to understand the interrelationships of the natural world; to identify and analyze environmental problems both natural and human-made; to evaluate the relative risks associated with these problems; and to examine alternative solutions for resolving and/or preventing them. These goals will be accomplished individually and cooperatively through laboratory activities focusing on experimental design and critical thinking, field research and data collection, research projects, evaluation of current issues, demonstrations, lecture, and problem sets. Students who complete this class will earn two weighted credits. In order to earn AP weighted credit, students must take the Advanced Placement examination in May.
Additional information: Summer work required. Two Common Lab Assessments will be completed.

Advanced Placement Physics I & II
097
Grade 11, 12
Prerequisites: Students must have a minimum grade of 90% in at least TWO College Prep Science Courses or minimum grade of 80% in TWO Honors Science Courses AND a minimum grade of 90% in CP Precalculus or minimum grade of 80% in Honors Math Analysis. Concurrent enrollment in Honors Calculus, Calculus AB or Calculus BC is highly recommended.

Advanced Placement Physics is equivalent to Physics 1 AND Physics 2 college-level physics courses, ergo will have TWO separate AP examinations in May. This course provides a systematic approach to the foremost principles of physics and emphasizes the development of problem solving skills using algebra, trigonometry, and basic calculus principles. This full-year course is designed to thoroughly explore and investigate applications of new principles in a laboratory setting to enhance techniques including focus, data collection, analysis, and presentation in formal reports. The content will include Newtonian Mechanics; Fluid and Thermal Mechanics; Electricity and Magnetism; Waves and Optics; and Atomic and Nuclear Physics. Students who complete this class will earn two weighted credits. In order to earn AP+ weighted credit, students must take the Advanced Placement examination in May.
Additional information: Summer work required. Two Common Lab Assessments will be completed. A lab portfolio is also required.

SOCIAL STUDIES COURSE OFFERINGS AND SEQUENCES

The flowchart below lists the standard progression of courses within the Social Studies Department. Students should review the course descriptions to determine which courses are right for their goals, grade level, and grades in previous courses. Students should make sure they meet the prerequisites, listed in the course descriptions, for the courses they want and that they obtain any teacher recommendations needed. Students are required to earn a non-American history credit for graduation. The non-American options are: Western or Eastern World History, AP Art History, or AP World History.

Recommended Grade	Career Prep	College Prep	Honors	Advanced Placement
Grade 9	US History II	CP US History II	Honors US History II	
Grade 10	Civics & Government	CP Civics & Government	Honors Civics & Government	AP Government AP Seminar AP US History AP Comparative Government
Grade 11 & 12 (Must choose 2 of the 3 courses listed.)	Eastern World History Western World History Economics	CP Eastern World History CP Western World History CP Economics	Honors Eastern World History Honors Western World History Honors Economics	AP US History AP Government AP World History AP Economics AP Psychology AP Seminar AP Research* AP Comparative Government AP Art History * Must first complete AP Seminar

Recommendations:
Any AP course can be taken junior or senior year, but students must take Western or Eastern World History, AP World History, or AP Art History to graduate.

Additional Recommendations:
The following courses are offered as electives to juniors and seniors, but do not count towards one of the four required social studies courses
Social Psychology
Criminal Justice

Open Campus Classes
Open Campus course descriptions can be found in Appendix A of the Course Selection Guide.

SOCIAL STUDIES COURSE DESCRIPTIONS

Student placement in Social Studies classes will be based on the following criteria, unless specifically stated in the course description:

- Grade from previous class
- Determining grade will not include grading categories that do not reflect assessment, such as homework or extra credit.
- Performance on local assessments, such as midterms and final exams
- PSSA scores from previous tests
- PVAAS projections of proficiency levels
- Teacher recommendation

United States History II
153
Grade 9
Social, political, geographical, economic and cultural histories are interwoven in this comprehensive survey of the United States from World War I to the present. This chronicle of the United States from World War I focuses on industrialization, urbanization, the major wars, economic patterns and social change associated with the twentieth century global economy. Fundamental reading, writing, organizational, and technological skills are developed through research projects, instructional activities, and both teacher-directed and student-centered learning.

College Prep United States History II
154
Grade 9
This college-prep level course is recommended for students considering post-secondary education but whose primary interests are away from the Social Studies field. This chronicle of the United States since World War I critically examines our recent past by focusing on urbanization, industrialization, major wars, and twentieth century economic and social change. Relationships are developed among historical events within the United States, Pennsylvania and the local community. Current issues are addressed. Essential reading, writing, and technological skills necessary for success at the post-secondary level are developed through research projects, instructional activities on reading and writing strategies, and both teacher-directed and student-centered learning. A historical writing research component is included. Daily homework is expected.

Honors United States History II
155
Grade 9
This Honors level course is recommended for students planning to attend a four-year liberal arts college or university, and with a strong interest and/or aptitude in history and the social sciences. Students should be reading above grade level and performing at well above average level. Students should be highly motivated and able to function independently within the classroom environment. This chronicle of the United States since World War I critically examines our recent past by focusing on urbanization, industrialization, major wars, and twentieth century economic and social change. Relationships are developed among historical events within the United States, Pennsylvania and the local community. Current issues are addressed. Essential reading, writing, and technological skills are introduced and developed through research projects, instructional activities, and both teacher-directed and student-centered learning. Advanced historical writing component is included. Independent reading, research, multi-tasking, and a strong work ethic are required for this course.

Civics and Government
1701
Grade 10
Civics and Government is a course intended for students who do not plan on pursuing post-secondary education. This course provides students with a fundamental understanding of our American government. Students will be challenged to connect with the democratic process. Students will be expected to demonstrate their understanding of how the American and Pennsylvania systems of government function and how they impact the lives of individual citizens. This course will focus especially on the national and state levels of government. Students will demonstrate an understanding that US citizens have both rights and responsibilities in order for society to function. Fundamental reading, writing, and technological skills are developed through a series of common research and writing assignments.

College Prep Civics and Government
1702
Grade 10
The College Prep level course intended primarily for students who plan to pursue post-secondary education. This course provides students with a practical understanding of our American government. Students will be challenged to connect with the democratic process. Students will be expected to demonstrate their understanding of how the American and Pennsylvania systems of government function and how they impact the lives of individual citizens. This course will focus especially on the national and state levels of government. Students will demonstrate an understanding that US citizens have both rights and responsibilities in order for society to function. Substantial reading, writing, and technological skills are developed through a series of common research and writing assignments. Regular homework is to be expected.

Honors Civics and Government
1703
Grade 10
This Honors level course is recommended for students reading above grade level and performing at well above average level. Students should be highly motivated and able to function independently within the classroom environment. The course is designed to provide students with a thorough understanding of our American government. Students will be challenged to connect with the democratic process. Students will be able to apply knowledge of the US and Pennsylvania Constitution and to demonstrate their understanding of how the American and Pennsylvania systems of government function and how they impact the lives of individual citizens. This course will focus especially on the national and state levels of government. Students will demonstrate an understanding that US citizens have both rights and responsibilities in order for society to function. Reading, writing, and technology will be used regularly to enhance skills that will be expected at the college level. Independent research and reading will be assigned. Daily homework is to be expected.

Eastern World History
1704
Grade 11, 12
Career Prep Eastern World History is intended for students who do not plan on pursuing post-secondary education. The course explores major events from 1450 to the present that have shaped the regions of Asia, Africa, and the Middle East. Fundamental reading, writing, and technological skills are developed through research projects, instructional activities, and both teacher-directed and student-centered learning. Homework assignments will reinforce concepts and content introduced in class.

College Prep Eastern World History
1705
Grade 11, 12
College Prep Eastern World History is a course that examines the Eastern World history from approximately 1450 C.E. up to the present day. This class approaches history through a chronological, geographic and thematic approach looking at threads of humanity over time. College Prep Eastern World History offers a balanced global approach, focusing on Africa, Asia, and the Middle East with references to the western world were needed. By combining time periods and historical themes, students will be able to understand and analyze the evolution and interactions of societies throughout history and begin to decipher what events have shaped the modern world. This course is geared towards students who are considering post-secondary education but whose primary interests are away from the Social Studies field. As a college prep level course, assignments are intended to expose and prepare students for the level of expectations they may face in higher education. Homework is an important component of the learning process.

Honors Eastern World History
1706
Grade 11, 12
Honors Eastern World History is intended for students planning to attend a four year college or university, and with a strong interest and/or aptitude in history and the social sciences. Honors

Eastern World History examines the Eastern World history from approximately 1450 C.E. up to the present day. This class approaches history through a chronological, geographical and thematic approach looking at threads of humanity over time. Students will analyze the changes and continuities that impact the societies of the Eastern World. The course offers a balanced global approach, focusing on Africa, Asia, and the Middle East with references to the western world were needed. By combining time periods and historical themes, students will develop the skills to analyze and understand the evolution and interactions of societies and begin to decipher what events have shaped the modern world. As an honors course, content requires a more critical analysis of the material, with the incorporation of more academically rigorous reading and writing assignments. Students will be asked to meet high expectations, intended to better prepare them for future studies in higher education. Daily homework is expected.

Western World History
1707
Grade 11, 12
Career Prep Western World History is intended for students who do not plan on pursuing post-secondary education. The course explores major events from 1450 to the present that have shaped the regions of Europe and North and South America. Fundamental reading, writing, and technological skills are developed through research projects, instructional activities, and both teacher-directed and student-centered learning.

College Prep Western World History
1708
Grade 11, 12
College Prep Western World History is geared towards students who are considering post-secondary education but whose primary interests are away from the Social Studies field. The course explores the events from 1450 to the present that have shaped the regions of Europe and North and South America. Essential reading, writing, and technological skills necessary for success at the post-secondary level are developed through research projects, instructional activities, and both teacher-directed and student-centered learning. Daily homework is expected.

Honors Western World History
1709
Grade 11, 12
Honors Western World History is intended for students planning to attend a four year liberal arts college or university, and with a strong interest and/or aptitude in history and the social sciences. Through a regional and thematic approach, Western World History explores the events from 1450 to the present that have shaped the regions of Europe and North and South America. Essential reading, writing, and technological skills are developed through research projects, instructional activities, and both teacher-directed and student-centered learning. Independent reading and research and a strong work ethic are required for this course.

Economics
1710
Grade 11, 12
Economics is a social science concerned with the choices we all make in life to satisfy our wants and needs. Economics introduces students to a new way of thinking about the world. The primary units of study will include: (1) Fundamentals of Economic Decision-Making, (2) Economic Theory, (3) Money and Debt Management, (4) Business and Labor, (5) Macroeconomic Policies and Globalization, (6) Becoming Financially Secure.
As a career prep level course, the focus throughout the course will be upon mastering the skills and knowledge that are most useful and practical in the real world. Essential topics such as personal financial literacy will be emphasized. Students will practice these skills both within and outside the classroom. Students will conduct economic research and actively study the economic world around them. Homework assignments will reinforce concepts and content introduced in class.

College Prep Economics
1711
Grade 11, 12
Economics is a social science concerned with the choices we all make in life to satisfy our wants and needs. College Prep Economics introduces students to a new way of thinking about the world. The primary units of study will include: (1) Fundamentals of Economic Decision-Making, (2) Economic Theory, (3) Money and Debt Management, (4) Business and Labor, (5) Macroeconomic Policies and Globalization, (6) Becoming Financially Secure.
As a college prep level course, assignments are intended to prepare students for the level of expectations they may face in higher education. This course will include a balance of both theoretical and practical elements; and will examine many economic principles that will assist students in developing the knowledge and skills required to make sound economic and financial decisions. Daily homework is expected.

Honors Economics
1712
Grade 11, 12
Economics is a social science concerned with the choices we all make in life to satisfy our wants and needs. Honors Economics introduces students to a new way of thinking about the world. The primary units of study will include: (1) Fundamentals of Economic Decision-Making, (2) Economic Theory, (3) Money and Debt Management, (4) Business and Labor, (5) Macroeconomic Policies and Globalization, (6) Becoming Financially Secure.
As an honors course, content is studied at a faster pace, at a higher level of difficulty, and with the incorporation of additional assignments and projects. This course will include an emphasis on understanding economic principles and theories, while still instructing students in the valuable study of personal financial literacy. Students will be asked to meet high expectations, intended to better prepare them for their future studies in higher education. Daily homework is expected.

ADVANCED PLACEMENT COURSES

Advanced Placement United States History
162
Grade 10, 11, 12
Prerequisite: Teacher recommendation and a minimum grade of an A in College Prep or B in Honors in his/her most recent, required Social Studies class.
Advanced Placement United States History is a two-semester college-level survey course in American political, economic and social history from pre-Columbian times to the present. Advanced skills requiring a critical analysis of reading, research and writing will be emphasized and developed, with the goal of preparing the student to succeed in post-secondary studies. To this end, considerable time is devoted to the critical analysis of primary and secondary sources in addition to extensive readings written on the collegiate level. Major projects include research-based essays; document based and free response essays, as well as in-class discussions and debates. Students who complete this class will earn two weighted credits. In order to earn AP weighted credit, students must take the Advanced Placement examination in May.
Additional information: Students may take AP United States History to satisfy the Civics requirement.

Advanced Placement World History
1631
Grade 11, 12
Prerequisite: Teacher recommendation and a minimum grade of an A in College Prep or B in Honors in his/her most recent, required Social Studies class.
AP World History is a two-semester, college-level course exploring the history of the world from 1200 to present. Students will strive to understand historical events through six prominent themes: (1) Human-Environment Interaction (2) Cultural Developments, (3) Governance, (4) Economic Systems, and (5) Social Structures, and (6) Technological Innovations. Approximately equal weight is given to each theme. This course emphasizes the analytical and writing skills necessary for success in higher education. To this end, considerable time is devoted to the critical evaluation of primary and secondary sources, historical research, short essays, interactive activities, and the creation of a well-developed document-based question. While AP World History requires students to master selective factual knowledge, skills such as comparison and contrast, demonstrating change over time, and making connections between topics are far more prominent than memorizing detailed facts. Students will access many online resources, and are encouraged to use technology both within and outside the classroom. Students who complete this class will earn two weighted social studies credits, and may be eligible for college credit. In order to earn AP weighted credit, students must take the Advanced Placement examination in May**.**
Additional information: Students may take AP World History to satisfy the Non-American History graduation requirement.

Advanced Placement United States Government
149
Grade 10, 11, 12
Prerequisite: Teacher recommendation and a minimum grade of an A in College Prep or B in Honors in his/her most recent, required Social Studies class.

Advanced Placement United States Government is a two-semester college-level survey course in American government, political and economic systems. The course will include components on comparative, state and local government systems. Advanced research and analytical thinking, reading and writing skills are emphasized and developed, with the goal of preparing the student to succeed in university studies. Major projects include research-based essays, debates, community events attendance and simulations. Students who complete this class will earn two weighted credits. In order to earn AP weighted credit, students must take the Advanced Placement examination in May.
Additional information: AP Government satisfies the "Civics and Government" Social Studies credit required for graduation. Students who complete AP Government are not eligible to Civics and Government course.

Advanced Placement Comparative Government
1491
Grade 10, 11, 12
Prerequisite: Teacher recommendation and a minimum grade of an A in College Prep or B in Honors in his/her most recent, required Social Studies class.
Advanced Placement Comparative Government is a two-semester college-level survey course in comparative government and politics. The course includes a focused study on the governmental systems of the following nation states: China, Great Britain, Iran, Mexico, Nigeria and Russia. Advanced research and analytical thinking, reading and writing skills are emphasized and developed, with the goal of preparing the student to succeed in university studies. Major projects include research-based summer essay project. Students who complete this class will earn one weighted credits. In order to earn AP weighted credit, students must take the Advanced Placement examination in May.

Advanced Placement Economics
220
Grade 11, 12 (offered only in the spring semester)
Prerequisite: Teacher recommendation and a minimum grade of an A in College Prep or B in Honors in his/her most recent, required Social Studies class.
AP Economics students will study a new way of thinking, understanding and explaining the world. This one semester course will be offered in the spring semester, and will be the equivalent of an introductory college-level course in Microeconomics. AP Economics will prepare students for the AP Exam as well as for future study in business, economics, history, and political science. The course will focus on how individuals and businesses deal with scarcity and competition in the real world. We will also address how the government, as well as other factors, can affect these economic decisions. Students will learn why the same product costs different amounts at different stores, in different cities, and at different times. Through a variety of classroom lessons, activities and simulations, students will engage with the subject of economics, and leave the course more thoroughly prepared to succeed at the university level. In order to earn AP weighted credit, students must take the Advanced Placement examination in May.

Advanced Placement Psychology
221
Grade 11, 12
Prerequisite: Teacher recommendation and a minimum grade of an A in College Prep or B in Honors in his/her most recent, required Social Studies class.
Advanced Placement Psychology is a two-semester college-level course designed to introduce students to the systematic and scientific study of the behavior and mental processes of human beings and other animals. This is the equivalent to an honors introductory college course in psychology. This would be useful to students of all college majors as it is a requirement in any post-secondary education. The Medical College Entrance Exam (MCAT) now includes 1/3 questions pertaining to psychology and sociology. This course is especially useful to students on a health-science pathway (e.g. nursing). Students who enroll should be highly motivated and intellectually curious: There will be nightly readings from a college-level textbook and a rigorous course syllabus. Students who complete this class will earn two weighted credits. In order to earn AP weighting, students must take the AP exam in May.
Additional information:

a) This course has a summer project and rat laboratory ($25 fee), earning two credits, whereas the Open Campus option is only one credit.
b) Students who have completed or are taking AP Psychology are not eligible to enroll in Social Psychology.
c) AP Psychology counts as a Social Studies credit, you are still required to take a "non-US History course.

Advanced Placement Art History
1650
Grade 11, 12 (fall semester only)
Prerequisite: Teacher recommendation and a minimum grade of an A in College Prep or B in Honors in his/her most recent, required Social Studies class.
NOTE: Artistic skill or experience is not necessary to take this course. This is not a studio art course, and does not emphasize the creation of art, but rather understanding world history through the lens of art and culture.
AP Art History is a challenging, college-level survey course that combines both art and history. In addition to addressing questions about how and why art is made, and how we think about art from different times and places; a deeper understanding and appreciation of world history and global cultures will be developed. Students learn to effectively identify works of art and architecture, explaining their form, function, and historical context. We trace human artistic endeavors from prehistoric to contemporary art; studying, analyzing, and discussing a diverse set of at least 250 required works. We explore ancient through medieval civilizations, as well as art and cultures of Africa, Indigenous Americas, Asia, Oceania, and Islamic traditions. Our study of western art explores many eras from Renaissance to the 21st century. Works are studied in their social, political, and religious contexts, requiring regular reading, discussion and analysis. Students think critically, developing college-level writing skills to present evidence-based conclusions in an AP essay format. In order to earn AP weighted credit, students must take the Advanced Placement examination in May.
Additional information: Students may take AP Art History to satisfy the Non-American History graduation requirement.

AP Capstone Program

AP Capstone ™ is an innovative diploma program from the College Board that equips students with the independent research collaborative teamwork, and communication skills that are increasingly valued by colleges. AP Capstone is built on the foundation of two AP courses – AP Seminar and AP Research – and is designed to complement and enhance the in-depth, discipline-specific study experienced in other AP courses.

In AP Seminar students investigate real-world issues from multiple perspectives, gathering and analyzing information from various sources in order to develop credible and valid evidence-based arguments. AP Seminar is a prerequisite for AP Research. Completing AP Seminar and all its required assessment components is necessary for students to develop the skills to be successful in AP Research. In AP Research, students cultivate the skills and discipline necessary to conduct independent research and inquiry in order to produce and defend their scholarly work.

The AP Capstone program aims to empower students by

- engaging them with rigorous college-level curricula focused on the skills necessary for successful college completion;
- extending their abilities to synthesize information from multiple perspectives and apply skills in new situations and cross-curricular contexts;
- enabling them to collect and analyze information with accuracy and precision;
- cultivating their abilities to craft, communicate, and defend evidence-based arguments and
- providing opportunities for them to practice disciplined and scholarly research skills while exploring relevant topics that appeal to their interests and curiosity.

AP Seminar
1720
Grade 10, 11, 12
Prerequisite: Teacher recommendation from a previous Honors and/or AP course
This year-long course is a foundational course that engages students in cross-curricular conversations that explore the complexities of academic and real-world topics and issues by analyzing divergent perspectives. Using an inquiry framework, students practice reading and analyzing articles, research studies, and foundational, literary, and philosophical texts; listening to and viewing speeches, broadcasts, and personal accounts; and experiencing artistic works and performances. Students learn to synthesize information from multiple sources, develop their own perspectives in written essays, and design and deliver oral and visual presentations, both individually and as part of a team. Ultimately, the course aims to equip students with the power to analyze and evaluate information with accuracy and precision in order to craft and communicate evidence-based arguments.

While concentrating first and foremost on research and writing methodology--especially critical review of professional scholarship--the theme of the AP Seminar course is "Race, Ethnicity, and Gender in the United States." The course, therefore, uses issues related to multicultural and intersectional studies, including Asian American Studies, African American Studies, Native American Studies, Islamic American Studies, Whiteness Studies, and Women's Studies so as to evaluate peer-reviewed articles, books, podcasts, interviews, speeches, non-profit organization websites, letters, film, music, and more. In short, this course is interdisciplinary. Students are expected to produce work that combines history, environmental science, biology, psychology, sociology, mathematics, American literature, ethics, communication arts, and world languages.

AP Research
1722
Grade 11, 12
Prerequisite: Successful completion of AP Seminar
AP Research allows students to deeply explore an academic topic, problem, or issue of individual interest. Through this exploration, students design, plan, and conduct a yearlong investigation to address a research question. In the AP Research course, students further develop the skills acquired in the AP Seminar course by learning research methodology, employing ethical research practices, and accessing, analyzing, and synthesizing information. Students reflect on their skill development, document their processes, and curate the artifacts of their scholarly work through a process and reflection portfolio. The course culminates in an academic paper of approximately 4,000–5,000 words (accompanied by a performance, exhibit, or product where applicable) and a presentation with an oral defense.

SOCIAL STUDIES ELECTIVES

Social Psychology
164
Grade 11, 12
Prerequisite: U.S. History II and Civics and Government
NOTE: Students enrolled or have already taken AP Psychology are not eligible for this class.
This elective course for juniors and seniors provides a systematic introduction to the field of social psychology, the study of how individuals are influenced by other people and social situations. The course will also cover basic concepts in general psychology. Topics covered include the brain, prejudice and discrimination, learning, human development, and mental illnesses. Special emphasis is placed on applying psychological principles and understanding to everyday life. This is a recommended course for those interested in Advances Placement Psychology.
Additional information: This course includes one unit in which students are required to work with a live animal. Rat lab fee of $25 is expected for this unit.

Criminal Justice
148
Grades 11, 12
Prerequisite: U.S. History II and Civics and Government
This elective course for juniors and seniors is designed to provide an overview of the justice process and the criminal justice system in general. Concepts of crime, deviance and justice will be discussed and general theories of crime causality will be examined. Individual rights in society will be explored, as will the legal definitions of various crimes. Examination of the organization and operation of the three basic components of the criminal justice system—the police, the courts, and corrections—individually and in relationship to one another, will also be explored in this course.

WORLD LANGUAGE COURSE DESCRIPTIONS

Student placement in higher level World Language classes will be based on the following criteria, unless specifically stated in the course description:

- Successful completion of an introductory class or previous level class with a grade of 70%.
- Determining grade will not include grading categories that do not reflect assessment, such as homework or extra credit.
- Performance on local assessments, such as midterms and final exams.
- Participation in class activities
- Teacher recommendation

French I
521
Grade 9, 10, 11, 12
In this beginning course, the emphasis is on correct pronunciation, vocabulary study, and basic rules of grammar. By learning short dialogues, the student has the opportunity to speak French with his classmates. In addition, French culture and the French influence on American life will be explored through videos and various activities.

French II
522
Grades 9, 10, 11, 12
This course is a continuation of the work begun in French I with further development of the four language skills: listening, reading, writing and speaking. Students learn more about French customs. Grammar knowledge, especially verb formation, is expanded significantly.

French III
523
Grades 10, 11, 12
Emphasis in this course is on improving oral and written command of the language. Vocabulary is enhanced, and students learn and practice the majority of French verb tenses. Class gradually advances to near 100% immersion by the end of the semester.

Honors French IV
524
Grade 10, 11, 12
This is a one-semester Honors-level course. Students will be immersed in French and use French nearly exclusively to communicate in class. Some explanations will be given in English, if necessary. Students will learn advanced grammar and will work to increase fluency, listening, reading and writing skills. Authentic materials from numerous French-speaking countries will be used frequently, especially for listening and speaking. This course is a prerequisite to AP French or Honors French.

German I
531
Grade 9, 10, 11, 12
By the end of this course, students will be able to introduce themselves, give instructions, provide and receive directions, address people, express likes and dislikes, tell time, discuss family and interest, recognize and use vocabulary needed for situations likely to be encountered by beginning language learners, demonstrate basic written German language skills, and demonstrate an understanding of basic elements of German grammar. Topics discussed focus on the student, their family and friends, their community, and their hobbies and daily schedule. Students will encounter the following practices in class every day: vocabulary practice and retention, listening, speaking, reading, and writing in German, and finally learning about the German culture, especially with respect to the use of German in the workforce.

German II
532
Grades 9, 10, 11, 12
By the end of this course, students will be able to recognize and use vocabulary appropriate for situations likely to be encountered by language learners, demonstrate basic written German language skills, and communicate with native speakers. Topics studied in this semester include friends and communities, famous Germans, German inventions and German products/ industry, birthdays, holidays, and vacation. Students will read short passages; demonstrate improved listening comprehension in German, and the understanding of basic elements of German grammar. The study of culture will continue with an emphasis on making connections between materials learned in the classroom and the use of German after high school.

German III
533
Grades 10, 11, 12
By the end of this course, students will be able to recognize and use vocabulary appropriate for situations likely to be encountered by language learners, demonstrate more advanced written German language skills, and communicate with native speakers and learners of German. Topics studied in this semester include technology and social media, cultural exchange (high school exchange or study abroad in college), Austria, innovations and the environment, as well as personal prospects as a student and future citizen. Students will read longer passages, demonstrate improved listening comprehension in German, and communicate in writing and speaking by use of more complex vocabulary and grammar. The study of culture will continue with an emphasis on making connections between materials learned in the classroom and the use of German in the work force. At PMHS three levels of the same world language are a requirement if a student wants to graduate with honors. The study of 3-4 levels of the same language is encouraged and considered for college admission by many universities. Many universities require several semesters of world language study in college, regardless the student's major. Therefore perfecting German in level 4 or AP in high school can be highly beneficial to students.

Honors German IV
534
Grade 10, 11, 12
Students have many opportunities to make use of their German skills in all four areas (reading, writing, speaking, and listening), though the primary focus on this class is on furthering speaking skills in German. A variety of topics, including German children's literature, German music – modern and classical, active communication with people from Germany, German speaking countries such as Austria and Switzerland, food, as well as German history, will be discussed. Cultural units focus on the students' interests. Students refine their writing skills by further study of composition. Students are expected to converse with classmates and the teacher in German. This course will serve as a pre-requisite to the AP German course or an Honors German V level course.

Advanced Placement German Language
536
Grade 11, 12
Prerequisite: B or better in Honors German 4 and/or World Language Department recommendation
The AP German Language course will prepare students to demonstrate their level of German proficiency across three communicative modes (Interpersonal, Interpretive, and Presentational) on the Advanced Placement German Language Exam. This year-long course is intended for students who wish to develop proficiency and integrate their language skills, using authentic materials and sources. Practice in integrating language skills and synthesizing written and aural materials are a fundamental part of the AP German Language course. The prerequisite for this course is a B or better in German 4, due to the advanced level of speaking and writing in the target language in this course. Students who wish to receive AP credit for this course must take the AP German Language Exam in May. Students, who do not wish to take a full year German AP course, may participate in half of this course (can count as German 5 for honors credit).
This course is offered every other year and German 4 is a prerequisite.

Spanish I
551
Grade 9, 10, 11, 12
In this level students will learn important classroom expressions in Spanish. Vocabulary topics will include the alphabet, numbers, clothing, classroom objects and school subjects, food, sports, the family, the house, and health. Students will learn how to talk about their favorite activities, describe their friends and family, tell time, and use all regular present tense verb forms. Grammar topics include adjective agreement, regular and irregular present tense verbs, possession, and direct and direct object pronouns.

Spanish II
552
Grade 9, 10, 11, 12
This course continues to build on skills previously learned in Spanish I. Students will be expected to begin speaking in the Spanish language more in classroom activities and discussions. Students will continue to develop their writing and reading skills as well. Vocabulary topics will

include: technology, hobbies, and travel vocabulary. Students will learn to use direct and indirect object pronouns, the present progressive tense, and the past, future and conditional tenses.

Spanish III
553
Grade 9, 10, 11, 12
This course continues to build on skills and knowledge from previous levels. New verb tense study includes the present perfect and commands. In addition, students study the differences between the preterit and imperfect tenses. Vocabulary themes include: medical treatment, cooking and food preparation, city and country living, cars and driving, public services, and holidays/celebrations. Most of the instruction is in Spanish and partway through the semester, students are expected to begin speaking exclusively in Spanish within the classroom. Most units also include both reading comprehension and directed writing activities.

Honors Spanish IV
544
Grade 10, 11, 12
This course builds on skills and knowledge from previous levels, with an emphasis on developing students' language abilities across the three modes of communication (interpretive, interpersonal, and presentational). The course is arranged thematically, with cultural and literary topics in each unit. Class is conducted nearly exclusively in Spanish, and students are expected to converse with classmates and the teacher in Spanish as well.

Advanced Placement Spanish Language and Culture
546
Grade 11, 12
Prerequisite: B or better in Spanish IV and World Language Department recommendation
This year-long course is designed to prepare students for the AP Spanish Language & Culture Exam. The course material correlates to the 6 contextual themes of the exam: Personal & Public Identities; Families & Communities; Science & Technology; Contemporary Life; Global Challenges; and Beauty & Aesthetics. Students will develop their proficiency in reading, writing, speaking, listening and presenting; practice integrating language skills; and learn to synthesize written and aural materials. The course is conducted exclusively in Spanish, and students are expected to adhere to a Spanish-only policy while in the classroom. Students who wish to receive AP credit for this course must take the AP Spanish Language & Culture Exam in May.

Appendix A

OPEN CAMPUS PA

Online Learning: Open Campus PA

Penn Manor School District is committed to providing students with a variety of learning options. Our partnership with Hempfield School District and their teachers allows us to offer a variety of online electives courses developed and instructed by teachers from both districts. Taking an online course through Open Campus PA prepares students for eventual online learning opportunities in higher education and the workplace, allows students scheduling flexibility, and offers courses that may not be available on-site. Learning and interacting with students and teachers from outside the Hempfield School District is a unique and valuable experience.

Enrollment Procedure

To enroll in an Open Campus PA course, simply select the course(s) through the Sapphire portal.

Students new to Open Campus PA, who have scheduled online courses for Semester 1, will receive directions to self-enroll in the Open Campus PA Moodle site, via their school email in May/June. Students with Open Campus PA courses scheduled in Semester 2 will receive these directions in November.

New students are also required to complete a short tutorial course that will prepare them to navigate their course(s) and to understand the requirements of being a self-directed learner.

Returning Open Campus PA students will simply receive notification of their enrollment activation shortly before the start of their selected course(s).

ART COURSES

FUNDAMENTALS OF DESIGN
0.5 Credit
Grades 10-12

This online course will give students a strong foundation in two-dimensional design and composition. Using basic tools and processes, students create and compose works based on short instructional videos and online explorations to develop their understanding of the design process. Critical analysis and interpretation of art through short readings and written explanations will cultivate students' knowledge and push them to embrace relevant vocabulary and descriptions of their personal hands-on art making processes. Students taking this course are required to have/purchase art supplies including (but not limited to) pencils, drawing paper, watercolor paper, brushes, and acrylic paints.

BUSINESS COMPUTER & INFORMATION TECHNOLOGY COURSES

PERSONAL FINANCIAL LITERACY
0.5 Credit
Grades 10-12

This introductory finance course provides students with a solid foundation for understanding the world of finance and making informed decisions about managing personal finances in adulthood. Students learn the connection between economics and setting and researching their own financial goals. Opening bank accounts, investing money, applying for loans, obtaining insurance coverage, career exploration, business and financial management, and making informed decisions about major purchases are some of the main topics included in this course. Finally, inspirational stories from individuals who planned well to reach their financial goals are shared.

ENGLISH LANGUAGE ARTS COURSES

CREATIVE WRITING
1.0 Credit
Grades 10-12

This course is designed to give students who have already mastered basic writing skills a creative outlet. The course lessons and activities encourage the use of the writing process to develop personal essays, short stories, plays, and poems. Students will focus on developing characters, plot, and dialogue in plays and stories and on mastering imagery, meter, and rhythm in poetry.

MEDICAL TERMINOLOGY
0.5 Credit
Grades 10-12

This online course introduces students to the structure of medical terms, their etymology, and their connection to the Latin language. This includes: prefixes, suffixes, word roots, combining form, singular and plural forms, plus medical abbreviations and acronyms. Students achieve comprehension of medical vocabulary related to medical procedures, prescriptions terms and abbreviations, human anatomy and physiology, and pathology. The knowledge and skills gained in this course will provide students thinking of entering the healthcare field with a deeper understanding of the application of the language of health and medicine. Students are introduced to these skills through direct instruction, individual practice, objective end-of-unit assessments, and two project-based authentic applications of knowledge.

SCIENCE FICTION LITERATURE
0.5 Credit
Grades 10-12

Students will examine science fiction literature and its impact on society. This course begins with a brief history of science fiction literature. Sub-genres of science fiction literature including time travel; biological science fiction; robots, mechs, and cyborgs; new worlds; aliens; and the dystopian future are all explored. The course also includes a novel requirement—a project that students will work to complete, throughout the course.

FAMILY AND CONSUMER SCIENCE COURSES

CHILD DEVELOPMENT 1: INTRODUCTION AND THEORY
0.5 Credit
Grades 10-12

This introductory course focuses on preparation and readiness for parenthood and/or child-related careers. Topics include family structures, child theorists, brain research, heredity, and environmental influences. After completion of this course with a grade of C or better, students may continue their study by enrolling in Child Development 2: From Conception through the Toddler Years (.5 cr.)

CHILD DEVELOPMENT 2: CONCEPTION THROUGH THE TODDLER YEARS
0.5 Credit
Grades 10-12
Prerequisite: Completion of Child Development 1 with a grade of C or better.

This course is designed to sequentially follow the Child Development 1: Introduction and Theory course. Topics include intellectual, physical, social, and emotional development. Units of study relate to nutritional needs and learning through play and safety.

HEALTH COURSES

HEALTH
0.5 Credit
Grades 10-12

This online health course examines and analyzes various contemporary health topics. Throughout the course students learn to identify and examine practices that can positively or negatively affect mental, emotional, and physical health. Topics covered include: safety and environmental health, choosing health services, mental and emotional health, coping with stress, family and social health, peer relationships, sexually transmitted diseases, and substance dependence and abuse.

SCIENCE COURSES

HONORS ASTRONOMY
1.0 Credit
Grades 10-12

The universe is comprised of infinite space. In this course, we will attempt to discover just how truly big it is by using by a variety of celestial objects existing around us. We will explore our night sky, constellations, solar system, galaxy, and what lies beyond in the far reaches of space. We'll learn about past and current projects for space exploration, as well as future ideas for space travel, but it all has to start with an introduction to the first astronomers. Our journey will also take us to black holes, quasars, supernovae, brown dwarfs, and current theories. Finally, we'll explore how we make observations from Earth and touch on the mechanics of the tools that aid us in our exploration of the night sky. All content, activities, and assessments are presented online, however, the nature of this course may require some independent nighttime observation activities. The Stellarium app is required on your internet device. (Hempfield students must request its installation by their technology department.)

Mix & Match Science Mini-Electives: Choose any 2 for .5 credit or any 4 for 1 credit in science, or as a general elective.

BOTANY
0.25 Credit
Grades 10-12

This course is a survey of the essential elements of botany, with a focus on the significant role of plants in human society. Topics include plant anatomy, horticulture and plant care, plant taxonomy, and the environmental and economic Importance of plants. Students will scientifically scrutinize the growth and development of a plant that they cultivate at home, reporting observations at intervals throughout the course. A deeper understanding of life sciences will be gained, providing the foundation for careers and/or recreational interests related to the fields of biology, agriculture, botany, and horticulture.

INTRODUCTION TO ECOLOGY
0.25 Credit
Grades 10-12

What does it take to survive? A difficult fight for survival ensues on planet Earth. While we do not know if life exists elsewhere, the one thing we do know is that this same fight for survival would occur, if it does. Individual living units, called organisms, must compete for resources, energy, and building blocks. In this Introduction to ecology course, students will learn what these resources and building blocks are, how they link together to create life, and how organisms get what they need to survive. Students will examine the interrelationships between living things that create the tremendous diversity of life observed here on Earth.

GEOLOGY
0.25 Credit
Grades 10-12
Prerequisite: College Prep or Honors Earth Science

Students will build a working knowledge of earth sciences, particularly geology, into a more cohesive whole. Beginning with a review of origins, the student will learn more about rocks and minerals, their formation and structure, and the subsequent positioning of these rocks and their formations in the geologic strata. Students will then view these formations from the perspective of the geologic time scale. Any laboratory experiences will occur solely online via activities and simulations. This course is recommended for students interested in pursuing a career in the environmental sciences and/or the Earth sciences**.**

METEOROLOGY
0.25 Credit
Grades 10-12

Students study the basic elements of weather observation and how that information is used to develop computer models and a weather forecast. By the end of the course, students will have an opportunity to log observations and create a simple forecast of their own. In addition, students will learn about safety measures that must be implemented during dangerous weather events. Finally, the difference between weather and climate will be explored.

INTRODUCTION TO BIOCHEMISTRY
0.25 Credit
Grades 11-12
Prerequisites: Biology (required) and Chemistry (recommended)

Designed for students planning to enter the fields of health or science, this course provides practical insight into the discipline of biochemistry. Students will learn the value of a working knowledge of biochemical processes in almost every aspect of health, science, and other industries including agriculture and law enforcement. Organic chemistry is introduced, and the four building blocks of biochemistry (proteins, lipids, carbohydrates, and nucleic acids) are explored in-depth. The course culminates with a look at how advances in technology have been the catalyst for exponential growth in this area of science.

INTRODUCTION TO MICROBIOLOGY
0.25 Credit
Grades 11-12
Prerequisite: College Prep or Honors Biology

This course is designed for students who are interested in “zooming in” to life forms and processes at the microscopic level. The classification, structure and physiology of microorganisms are stressed, emphasizing specific microbes that cause disease. The role of anti-microbial agents and antibiotics are thoroughly examined. Finally, students will study the human immune system with respect to infectious disease. This course is highly recommended for students interested in the fields of health care, environmental science, and agriculture

OCEANOGRAPHY
0.25 Credit
Grades 9-12
Prerequisite: College Prep or Honors Earth Science

This course introduces the important physical processes of our oceans in a way that encourages understanding of both the conceptual physical principles and how these principles fit into the concept of Earth as a dynamic, interacting system. Initial focus is on the basic history laying the foundation of the principles upon which physical oceanography is based. These principles are then used to foster an understanding of waves, tides, currents, and large-scale ocean circulation. The activities in the course are designed to showcase the student's knowledge of the concepts learned in class. Throughout the course, examples will be given to show how physical oceanography affects, and is affected by, the biological, chemical, and geophysical processes in the ocean. At the completion of this course, the student will have a working knowledge of the dynamics associated with Earth's oceans.

ZOOLOGY
0.25 Credit
Grades 10-12

This informational and project-based course provides a practical introduction to the scientific study of the animal kingdom. Topics explored include: the hierarchy of life, an overview of multiple animal phyla, animal characteristics, physical anatomy and behavior, evolution, taxonomy, classification, nomenclature, and careers within the field of zoology. Throughout the course students incrementally complete a final project—the development of an electronic museum exhibit featuring a particular animal. Students interested in animal sciences, agricultural sciences, biology, or any career path that includes life sciences will benefit from taking this course.

SOCIAL STUDIES COURSES

AP PSYCHOLOGY
1.0 Credit
Grades 11-12

Advanced Placement Psychology is an in-depth study of human behavior. Topics including learning, personality, abnormal psychology, therapy, and human development will be investigated. Textbooks are college-level and students will be expected to read independently. Analysis and synthesis will be demonstrated through the writing of essays and other activities. College credit and/or advanced placement may be obtained by achieving a satisfactory score on the standardized Advanced Placement Psychology exam

CRIMINAL JUSTICE
0.5 Credit
Grades 10-12

This course is designed to provide an introductory overview of the U.S. justice process and the criminal justice system in general. Concepts of crime, deviance, and justice will be discussed, and general theories of crime causality will be examined. Individual rights in a democratic society will be explored, as will the legal definitions of various crimes. The organization and operation of the three basic components of the criminal justice system—the police, the courts, and corrections—individually and in relationship to one another, will also be explored. The theme of individual rights vs. public order is the framework for the course content.

POPULAR MUSIC IN AMERICA: ITS EVOLUTION AND CULTURAL HISTORY
0.5 Credit
Grades 10-12

Popular Music in America is designed for students who have an interest in music but may or may not be inclined toward musical performance. This online course will introduce the history and influence of American music within the broader context of American culture. The primary goal of the course is to forge connections between the world of contemporary pop music (with which most students are intensely involved) and the historical roots of this music (which most know very little about). Students will learn about the music that became associated with various eras of American history, and also the history of various genres of music including the Blues, Jazz, Rock, Country, and Rap.

TECHNOLOGY& ENGINEERING COURSES

INTRODUCTION TO VIDEO GAME DESIGN
0.5 Credit
Grades 10-12

This online course provides students the opportunity to take their experience with, and interest in, playing video games to the next level—development of a video game. Video Game Design is an introductory project-based course that allows students to explore the psychology behind what attracts individuals to certain video games, simple video game design and development, and the business and marketing aspects of video game promotion. Students will create a game using simple software, develop a marketing plan to promote the game, and field test games developed by classmates. Students will utilize multiple skills and knowledge sets to develop a product for an authentic business scenario. The curriculum framework incorporates science, technology, engineering, and math (STEM), along with aspects of psychology, business, and writing. This is truly an inter-disciplinary course.

INTRODUCTION TO WEB DEVELOPMENT
0.5 Credit
Grades 10-12

Students are introduced to basic web design and development using HTML (Hypertext Markup Language) and CSS (Cascading Style Sheets). Students will learn to plan and design effective web

pages; implement web pages by writing HTML and CSS code; enhance web pages with the use of page layout techniques, text formatting, graphics, images, and multimedia; and produce a functional, multi-page website. Upon successful completion of this course, students will have a practical foundation in web design using HTML and CSS.

WORLD LANGUAGES COURSES

LATIN I
1.0 Credit
Grades 10-12

In Latin I, we learn about what makes an ancient language so different from a modern language: inflection. In addition to learning about inflections, we will learn how to use those inflections to read a Latin text and to write simple Latin sentences. Our study of the lives, thoughts, and customs of the Roman people will take place through the reading of a variety of Latin texts throughout the semester. All readings are based on works of Roman authors such as Ovid, Livy, Phaedrus. Specific activities are completed to help students see and understand the direct relationship between Latin and English vocabulary. There is also an opportunity to discuss and reflect upon the cultural connections and difference between the ancient and modern world and how we can take what we learn in the classroom and use it to participate in a global society.

LATIN II
1.0 Credit
Grades 10-12
Prerequisite: Successful completion of Latin I

During Latin II, our study focuses on a very specific period of Roman History: The Pax Romana under the leadership of Emperor Augustus Caesar. This is the period in Rome's history when it is changing its style of government from a Republic to an Empire. With that change comes the challenge of having people accept an emperor as their leader rather than elected officials. We look closely at how Emperor Augustus utilized the Roman poet Vergil to create a national narrative and assert his political agenda through the creation of the epic poem, The Aeneid. In addition we also focus on the works of the other popular author of the time Ovid. Ovid focused on the same themes in his literature as Vergil but wrote for the people rather than the emperor. The themes of this time period that we read about are: looking to the past in order to move forward, piety, and love. An emphasis is placed on connecting the past to the present. Additionally, we continue the study of some important concepts in Latin grammar. These grammatical concepts will usher us into the world of Roman thought and help us to understand how they expressed and communicated ideas via grammar. We move from a word by word translation of the text into an interpretation of ideas expressed solely by a grammatical form.