Program of Academic Studies

2017–2018

A Course Selection Guide for
Grade 9 • Grade 10 • Grade 11 • Grade 12

North Penn High School
Pennbrook Middle School
Penndale Middle School
Pennfield Middle School
Northbridge School

Please note: May 5, 2017 is the final deadline for student and/or parent initiated requests for course changes.
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PROCEDURE FOR COURSE SELECTION

Students in grades 8-11 should use the Program of Academic Studies to outline a four year plan for their academic studies (See Graduation Requirements: Credits and Courses) and to select courses for the coming school year which fit this plan.

Students should:
1. Review the Program of Academic Studies, including the departmental course listings beginning on page 11.
2. Consult with parents, teachers, and counselors to select courses and complete the course selection sample found on the inside of the back cover for grade 9 and the back cover for grades 10, 11, and 12.
3. SELECT AT LEAST 38 PERIODS OF CLASSROOM INSTRUCTION AND NO MORE THAN 42 PERIODS OF CLASSROOM INSTRUCTION.
4. SELECT ALTERNATE COURSES FOR ALL ELECTIVE COURSES, INCLUDING ELECTIVE MAJORS AND MINORS.

BE SURE TO LIST ALTERNATE COURSES!

INDIVIDUAL REQUESTS FOR COURSES MAY RESULT IN A SCHEDULING CONFLICT, MAKING IT NECESSARY TO COMPLETE YOUR SCHEDULE WITH AN ALTERNATE COURSE. PRIORITIZE YOUR LISTING OF ALTERNATE CHOICES.

WHEN THERE ARE NO ALTERNATE COURSES LISTED, SCHEDULES WILL BE COMPLETED BY COURSE AVAILABILITY, AND A REQUEST FOR A SCHEDULE CHANGE FOR THE ASSIGNED COURSE WILL BE DENIED.

5. Complete the course selection process using Home Access Center to select courses. For assistance, contact your guidance counselor.
6. Verification sheets are provided in the Spring so that appropriate schedule change requests can be made by the May deadline.

COURSE SELECTION INFORMATION

Graduation Requirements: Credits

Listed below are the minimum credit requirements which students must meet in order to qualify for the NPHS diploma. Students who repeat one or more grade levels at the high school level must meet the graduation requirement for the year they will graduate.

<table>
<thead>
<tr>
<th>CREDITS REQUIRED</th>
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<tbody>
<tr>
<td>ENGLISH</td>
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</tr>
<tr>
<td>SOCIAL STUDIES</td>
<td>4.0</td>
</tr>
<tr>
<td>MATHEMATICS</td>
<td>3.0 OR 4.0***</td>
</tr>
<tr>
<td>SCIENCE</td>
<td>3.0 OR 4.0***</td>
</tr>
<tr>
<td>ARTS/HUMANITIES</td>
<td>2.0**</td>
</tr>
<tr>
<td>HEALTH</td>
<td>0.9</td>
</tr>
<tr>
<td>PHYSICAL EDUCATION</td>
<td>1.2</td>
</tr>
<tr>
<td>ELECTIVES</td>
<td>3.9</td>
</tr>
<tr>
<td>TOTAL</td>
<td>23.0*</td>
</tr>
</tbody>
</table>

* Minimum number necessary for graduation.
** Courses qualifying to meet the arts & humanities requirement include those in art, elective English, family and consumer science, technology education, world languages, music, computer sciences, and the fourth year of social studies. One North Montco Technical Career Center credit may be substituted to meet the arts & humanities requirement. The other arts and humanities credit for NMTCC students must be scheduled at the high school. Refer to Keystone Proficiency Program for more information (page 4).
*** The credit requirement for Mathematics and Science is 7 total credits with a minimum of 3 in each. Students not proficient in the Algebra 1 Keystone take the 7th credit in math.

Credit Requirements

Minimum cumulative credit expectation:

<table>
<thead>
<tr>
<th>ENTERING THE RESPECTIVE GRADE</th>
<th>REQUIRED CRITERIA</th>
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</thead>
<tbody>
<tr>
<td>GRADE 9</td>
<td>STUDENTS MUST PASS ENGLISH, SOCIAL STUDIES, MATH, AND SCIENCE</td>
</tr>
<tr>
<td>GRADE 10</td>
<td>4 CREDITS</td>
</tr>
<tr>
<td>GRADE 11</td>
<td>11 CREDITS</td>
</tr>
<tr>
<td>GRADE 12</td>
<td>16.5 CREDITS</td>
</tr>
</tbody>
</table>

At the conclusion of an academic year students who are credit deficient and therefore not on track to graduate on time will be notified in writing.

NOTE: Students who fail a course with a final grade of an “E” are advised to enroll in summer school for remediation and credit recovery.

Graduation Requirements

Students must earn a minimum of 23 credits in grades 9-12 in specific areas and demonstrate proficiency on the Algebra 1, Biology, and Literature Keystone Exams to qualify for the North Penn High School diploma. Required courses must be supplemented with elective courses.

Grade 9 – Required Courses

• English
• America in History 2
• Mathematics
• Physical Science
• Physical Education
• Health
• Computer Applications 3

In addition to the courses listed above, ninth grade schedules must reflect one of the following combinations; depending on proficiency status: *

A) one major elective and three minor electives
B) two major electives

Grade 10 – Required Courses

• English
• America in History 3
• Mathematics
• Biology
• Physical Education – Aquatics
• Health Decisions
In addition to the courses listed above, tenth grade schedules must reflect one of the following combinations: *
A) one major elective and two, three, or four minor electives
B) two major electives
C) two major electives and one minor elective

Grade 11 – Required Courses
• English
• World History
• Mathematics
• Science
• Physical Education
• Health and Society

In addition to the required courses listed above, eleventh grade schedules must reflect one of the following combinations: *
A) one major elective and two, three, or four minor electives
B) two major electives
C) two major electives and one minor elective

Grade 12 – Required Courses
• British Literature 12 (1 semester)
• Sr. English elective (1 semester)
• Government (1 semester)
• Social Studies elective (1 semester)
• Math** or Science
• Physical Education

**Refer to Keystone Proficiency Program on page 8.

In addition to the required courses listed above, twelfth grade schedules must reflect the equivalent of a minimum of two additional major courses and three minor courses.

Alternate Courses
Students must indicate an alternate (second choice) course for each:
• semester course
• minor elective
• practical arts course
• whenever six majors are elected

*Students who elect 6 major courses, NMTCC, or an off-campus program, are not required to select minor electives. However, NMTCC students must be sure that their rosters will enable them to complete the arts and humanities credits by the end of the senior year. This requirement may necessitate minor subjects every year.

Every student in grade 10-12 is required to schedule at least 38 periods of classroom instruction including a minimum of five major subjects. Students on partial day off-campus programs are expected to schedule a minimum of 3 majors. No more than 4 study halls per semester may be scheduled.

Graduation Requirements: Keystone Examinations
In January 2010, the Pennsylvania Department of Education (PDE) published changes to the Chapter 4 regulations which set more rigorous requirements for high school graduation through the adoption of Keystone Exams. These exams are end-of-course assessments that measure what a student has learned as a result of their coursework. Students who are not proficient will have the opportunity to retest at a later point in time in order to demonstrate proficiency. It is important to note that each student’s highest Keystone performance level in Algebra 1, Biology and Literature will be included on student transcripts. The timeline and requirements set forth by PDE are outlined below:

In 2010, the Pennsylvania Legislature approved changes to Chapter 4 regulations for more rigorous requirements for high school graduation through the adoption of Keystone Exams in Algebra 1, Biology and English Literature. The Keystone exam replaces the final exam in all Keystone courses. Keystone exams are end-of-course assessments that measure what students have mastered as a result of their coursework. Students who are not proficient will have the opportunity to retest and/or participate in a project-based assessment (PBA) at a later point in time in order to demonstrate proficiency.

All students will be required to demonstrate proficiency on the Algebra 1, Biology, and English Literature Keystone Exams as well as satisfactorily pass all required credits, in order to graduate from high school and receive a high school diploma.

For more information on these topics please visit www.education.state.pa.us or www.pdesas.org.

Keystone Proficiency Program
Students who are unable to meet Chapter 4 requirements via the Keystone Exam qualify to successfully complete an on-line project-based assessment course as an alternative pathway to meeting graduation requirements.

Students who have not achieved proficiency on a Keystone exam will be required to complete an intervention before retaking the applicable Keystone. Intervention may take the form of a specific course within a student’s schedule, a 9th Period tutorial, or a summer course. Qualifying students who choose to enroll in the summer intervention take the applicable Keystone exam at the completion of this course. Students who are not proficient after at least two attempts on the Algebra 1 Keystone are required to schedule and master the Algebra 1 project-based assessment course. Students who are not proficient on the Biology Keystone after at least two attempts on this Keystone are required to schedule and master the Biology project-based assessment course. Students who are enrolled in the Technical Career Center and have not demonstrated proficiency after one attempt on the Biology Keystone exam may qualify to participate in a project-based assessment in Biology provided the student has completed the Biology course and met the district and Technical School attendance requirements. Students who are not proficient on the English Literature Keystone after at least two attempts on this Keystone are required to schedule and master the English Literature project-based assessment course.

Algebra 1
Students who have not achieved proficiency in Grade 8 and do not complete the summer intervention course will retake Algebra 1 in Grade 9. Students who score at the Basic level on the Algebra 1 Keystone at the end of Grade 9 will be enrolled in the Geometry Extended course in their sophomore year. Students who score Basic have the option of enrolling in the summer Keystone Algebra 1 intervention course prior to their sophomore year in order to take the 6 period per cycle Geometry course during their sophomore year. Students in the Geometry Extended retake the Keystone in December of the same year.

Students who score at the Below Basic level on the Algebra 1 Keystone at the end of Grade 9 are required to take the Algebra 1B course in their sophomore year and will retake this Keystone in their Sophomore year. Students who score Basic on the May Algebra 1 Keystone exam in Grade 10 may enroll in the summer Keystone intervention course.

Biology
Students who score below proficiency on the Biology Keystone at the end of Grade 10 will be enrolled in a one-semester “Selected Topics in Biology” course in their junior year. Students who score
Basic have the option of enrolling in the summer Biology Keystone intervention course prior to their junior year. Students who take this summer course and score proficient on the Keystone Biology exam will not be required to schedule the “Selected Topics in Biology” course in their junior year. The Biology Keystone exam will be re-administered at the conclusion of the “Selected Topics in Biology” course, as well as at the conclusion of the summer course.

**English Literature**
Students who score below proficiency on the English Literature Keystone at the end of Grade 10 will receive the intervention within the context of their English course in their junior year. Students who achieve at the Basic level have the option to participate in the summer Keystone English Literature intervention course and retake the Keystone at the conclusion of this summer course. Students who are not yet proficient by the start of their senior year will be required to schedule and master an English Literature course.

**Course Advancement**
Course Advancement is a process that enables students to participate in higher level courses in at the high school level. Students may enroll in and satisfy specific prerequisites for certain courses online during the summer through the Montgomery Virtual Program (MVP) facilitated by the Montgomery County Intermediate Unit. Although the financial responsibility and completion of coursework lies primarily with the student and his or her parents/guardians, students with demonstrated financial need should consult their guidance counselor for grant opportunities that may exist. For more information about Course Advancement, contact your child’s guidance counselor or go online to [http://www.npenn.org/CourseAdvancement](http://www.npenn.org/CourseAdvancement).

**Course Availability**
Some course titles indicate the appropriate grade level in which a course may be taken. Other course titles will have grade level limitations placed under the title and prior to the description. If no grade designation appears in the title or under the title, the course is available to students in grades 10, 11 and 12. A diamond (♦) under the course title indicates the course is available in grades 9, 10, 11 and 12.

**Sequential Courses**
When developing a four year plan for academic studies, students should identify a sequence of courses which supports their career goals. Courses which build upon one another lead to a focused plan. Students may enroll in and satisfy specific prerequisites for certain courses online during the summer through the Montgomery Virtual Program (MVP) facilitated by the Montgomery County Intermediate Unit. Although the financial responsibility and completion of coursework lies primarily with the student and his or her parents/guardians, students with demonstrated financial need should consult their guidance counselor for grant opportunities that may exist. For more information about Course Advancement, contact your child’s guidance counselor or go online to [http://www.npenn.org/CourseAdvancement](http://www.npenn.org/CourseAdvancement).

**Course Changes**
Students are advised to select courses wisely and carefully with a post-secondary goal in mind. **ALL STUDENTS ARE EXPECTED TO CONTINUE IN AND COMPLETE THE COURSES SELECTED.**

Adequate course selection planning for students, teachers, and classroom space can be completed only when school officials can consider student requests to be final and binding. When a change in course selection is desired prior to the deadline, the student is expected to schedule and attend a conference with the guidance counselor to arrive at a reasonable decision. Parents who wish to schedule a conference may call the appropriate school:

- **North Penn High School** 215-368-9800
- **Pennbrook Middle School** 215-699-9287
- **Pennsdale Middle School** 215-368-2700
- **Penfield Middle School** 215-368-9600

**PLANNING THE ACADEMIC PROGRAM**
As students select courses, they will benefit from planning an academic program based on their future plans and expectations. The courses taken in high school lead students on a career pathway. All students will find more success if they have completed high school courses that have given them a foundation in their field of career interest. The North Penn School District has designed six Career Pathways for students to explore.

Consult the Career Pathways Planner at [www.npenn.org](http://www.npenn.org) for descriptions and suggestions on how to plan an appropriate academic program.

**NORTH PENN ACADEMIES**
The North Penn School District offers an Academy Program in Engineering and Communication. An academy is a small learning community with a select number of students who have a specific career interest. Students in the academy follow selected courses, receive personalized guidance, and participate in activities, both in and out of school, that relate to the careers of the academy.

Students entering their sophomore year have the opportunity to apply to be a member of either the Engineering or Communication Academies.

Students who wish to apply for admission will use the following process:

- Complete the written application
- Obtain one counselor recommendation
- Obtain two teacher recommendations in the area of concentration

Students must meet the following eligibility requirements:

- A minimum of “B” in the 5.0 or 6.0 course of the specific academy subject area;
- A discipline record which indicates a positive attitude towards studies;
- No Ds or Fs in any course in grade 9.

Interested students should contact their guidance counselor for additional information and application information.

**AIR FORCE JROTC**
North Penn High School is excited to offer students in Grades 9 to 12 the opportunity to participate in the Air Force Junior Reserve Officer Training (AFJROTC) program. Science courses offered within the academic curriculum are Science of Flight, Frontiers of Aviation and Exploration of Space; the Social Studies courses offered within the academic curriculum are Global Studies. All students receive leadership and interpersonal communication skills
Students in Grades 9, 10, 11, and 12 may elect the AFJROTC curriculum at the 5.0 level of academic challenge. Ninth graders enrolled in the Science of Flight course will begin their day at North Penn High School where they will take both their AFJROTC course and either their math, world language or additional course as outlined by their guidance counselor. Transportation to the High School will be via the regular high school bus. Following second period at the High School, transportation is provided to return 9th graders to their respective Middle School in time for their third period class. Participation in the AFJROTC program offers 9th graders an exceptional opportunity to take High School courses early.

Students are expected to wear the Air Force uniform once per week and comply with grooming standards.

The AFJROTC is a leadership program that provides an exceptional opportunity for students to participate and support community events. Each year North Penn’s AFJROTC detachment supports over 90 different community activities. While participation is not a mandatory part of the curriculum it is encouraged, with many students finding this aspect of the program exceptionally rewarding.

While there is absolutely no military obligation for participating in the AFJROTC program, students electing to enlist in the Armed Forces following High School will receive an accelerated rank promotion as a result of their AFJROTC participation. However, JROTC is not a military recruiting tool.

For a nominal fee, AFJROTC students who receive a “B” grade or higher may receive college elective credit via the dual enrollment agreement with Adams State University, an accredited four year university in Colorado. Students electing this option may receive a total of 21 college credits over the course of the AFJROTC four year program. Please see your AFJROTC instructor for further details.

Summer Leadership Academy

The AFJROTC Summer Leadership Academy (SLA) is a summer session offered as part of the overall AFJROTC curriculum. This session focuses on the development of the student’s leadership and intercommunication skills through academic and field exercises. Students are afforded a hands-on opportunity to apply their leadership and interpersonal skills through assigned leadership positions and field exercises.

**GENERAL INFORMATION**

Advanced Placement Opportunities

North Penn High School participates in the College Board Advanced Placement (AP) Program. The AP program consists of college-level courses and exams that give high school students the opportunity to receive advanced placement and/or credit in college. Such credits can mean a savings in both college costs and time in school for students.

North Penn students may earn college credit at many colleges by achieving appropriate scores on Advanced Placement Tests offered by the College Board each May. Many departments in the high school offer AP classes. Students can prepare for these tests by taking one or more of the following advanced placement courses: English; European History; Government: United States and Comparative; United States History; World History; Psychology; Economics; Biology; Chemistry; Physics; Calculus 1 & 2; Statistics; Computer Science Principles; AP Seminar; AP Re-search; Computer Science; French; German; Spanish; Latin, Music Theory, Studio Art, and Art History. While it is highly recommended that students take the AP course before taking the AP exam, it is not required. A fee is charged for each test. Students on free or reduced lunch are eligible for a fee waiver. AP Environmental Science is available to students via Virtual High School. (See Page 51.)

The College Board reports that in a study of 400 former AP students interviewed at their colleges, more than 90% ranked their AP experiences as the most valuable of their high school studies. Interested students and parents should consult the course descriptions in the Program of Studies. Further information may be obtained from the student’s counselor.

Articulation Agreements

North Penn students may apply to participate in the following Articulation Agreement:

- Early Childhood Development with Montgomery County Community College

After obtaining an application from their counselor, juniors begin following a specific sequence of courses in high school and continue after graduation in a two-year post-secondary program. A 2.0 unweighted GPA is needed to move from high school to a college with an agreement. This program allows students to take courses at an advanced level in college; it does not mean the student will receive college credit in high school or advanced placement credit.

Class Rank/Course Level

<table>
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<th>GRADE VALUES FOR EACH COURSE LEVEL</th>
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<tbody>
<tr>
<td>GRADE EARNED</td>
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<td>---------------</td>
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<td>D</td>
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<td>E/F</td>
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</table>

Class rank is computed at the end of each academic year (grades 9, 10 and 11) and at the end of the first and second semester of the senior year. All students in the class are included, and ranking is cumulative from grades nine through twelve.

To compute class rank, final course grades in major courses are used. Final course letter grades are assigned the weighted numerical values depending upon the level of the course shown in the above table. For students with six majors, instead of the usual five, the course yielding the lowest GPA will be eliminated from the calculation of GPA. Subjects ineligible for the sixth major exclusion include required English courses, America In History 2, America In History 3, World History, AP World History, AP US History, American Government and AP Government, Algebra 1, Algebra 1B, Algebra 1-Part 1, Algebra 1-Part 2, Algebra 2, Algebra/Geometry, Geometry, Physical Science, required Biology, and the first year of Chemistry. Such courses are noted with the letters “IFE” (Ineligible For Exclusion) in this booklet.
GPA/Class Rank Calculation Procedures

Class Rank is determined by first calculating each student’s weighted Grade Point Average (GPA) which then serves as the basis for the comparative order or rank.

For the exclusive purpose of calculating grade point average, classes with credit values of 1.15, 1.3, or 1.5 will be assigned a value of 1.00 credit when determining the Quality Points and Total Qualifying Credits (TQC) for use in the Grade Point Average formula.

GPA is determined by the following process:

1. **Quality Points (QP)** earned are determined for each major course (minor courses are not included in ranking calculations). QP is the multiplicative product of the predetermined course credit value listed above and the Weighted Grade Value from the “Grade Value for each Course Level” table above based on the student’s final course grade. For example: A student who has earned a final grade of B in a 6.0 honors level course earning 1.15 credits will earn 5.0 Quality Points for that course [QP = 1.0 (the predetermined value for the course) x 5.0 (the weight for an honors level “B”) = 5.0].

2. If more than five majors are taken, the quality points are initially determined for all majors. Only those five courses which yield the highest GPA are selected for the GPA calculation, unless the courses are designated as Ineligible for Exclusion (IFE) from the GPA calculation. Courses designated as (IFE) courses must be included in the GPA calculation regardless of the Quality Points they earn. The number of credits used for GPA calculation must equal at least five per year.

3. The **Total Qualifying Credits (TQC)** are determined by summing the predetermined credit values for the 5 qualifying majors for each year.

4. The **Total Quality Points (TQP)** is determined by summing the Quality Points earned for the 5 qualifying majors which yield the greatest (TQP).

5. **Grade Point Average (GPA)** is calculated by dividing Total Quality Points (TQP) by Total Qualifying Credits (TQC). That is: GPA = TQP/TQC.

6. Grade Point Averages will be rounded to the nearest hundredth of a decimal point for class rank determination.

Class rank is then determined by ordering the GPA for all students currently enrolled in the class. Those with the same GPA receive the same rank. When multiple students qualify for the same rank, the rank position of students who follow in GPA order remains as the same rank. When multiple students qualify for the same rank, the rank position of students who follow in GPA order remains as the same rank. When multiple students qualify for the same rank, the rank position of students who follow in GPA order remains as the same rank.

College Information and Planning

Information on colleges and universities is available in the College and Career Center at the high school. Students are encouraged to investigate post-secondary educational opportunities which meet their career goals. Students should contact their counselors for information regarding colleges and course requirements.

College Admission Requirements

Requirements for admission to college usually extend beyond the minimum requirements for high school graduation. Students should consult catalogs of colleges or websites in which they are interested to be sure they are selecting the right courses. Many colleges also expect students to have completed two years of a world language. Highly selective colleges often require applicants to take more of these courses as well as honors and AP courses.

**Early Admission to College**

Students who wish to accelerate their admission to college should contact their counselor. Once certain about the desire to accelerate, students should complete an early admission contract form and contact their counselor to arrange a conference with parents, counselor, and the high school principal. The contract should be submitted at least six months prior to the desired date of college enrollment. All costs associated with college application and attendance are the responsibility of the students and their families. The high school diploma will be awarded to these students upon successful completion of the freshman year of college.

**College Campus Opportunities**

Several local colleges and universities accept high achieving high school students on a part-time basis as a supplement to courses taken at North Penn. In most cases these students carry at least three major courses at North Penn. If approved in advance by the principal, such part-time college work may sometimes be submitted to meet NPHS graduation requirements. Parental permission is necessary and transportation costs as well as tuition and other fees are the responsibility of the student and the student’s family. Interested students may obtain further information and details by contacting their counselor.

**Concurrent Enrollment**

Concurrent enrollment enables academically eligible seniors to take college courses that are totally independent of their high school transcript and have no impact on the students eligibility for graduation from North Penn High School. Concurrent enrollment is targeted to support students in the transition from high school to college. The program enables seniors to take one or more college courses during their senior year to gain a greater understanding of what skills are needed to be successful in a college environment with college academic expectations. North Penn High School has partnered with Gwynedd Mercy University, Penn State University - Abington, Arcadia University, and Montgomery County Community College to offer college courses to North Penn High School seniors. Students have the option to split their day between the college campus and the high school either in the AM or in the PM.

In order to be eligible for concurrent enrollment, seniors must have at least 20 credits by the end of their junior year and have scored at or above proficiency on the Keystone exams in Algebra 1, Biology, and English Literature by the end of 11th grade. Tuition, as well as transportation to and from the college campus are the student’s and parent’s responsibility. For additional information, contact your high school counselor.

**Dual Enrollment Programs**

The Dual Enrollment concept enables students to earn both high school and college credit at the same time. College registration for this program occurs in July for the Fall Semester and November for the Spring Semester.

Dual Enrollment is offered as either an on-campus or an off-campus education opportunity.

- **Off-campus** — Students can take elective courses at select colleges and universities during their senior year in high school. They must consult their guidance counselors prior to scheduling the courses in order to make sure the courses meet graduation requirements and to discuss scheduling possibilities. Tuition, books and transportation to and from the college or university are the student’s and parent’s responsibility.
• **On-campus** — Gwynedd Mercy University, MCCC, and Adams State College courses offer several credit-bearing courses at North Penn High School in the Business Education, Family and Consumer Science Departments, as well as Air Force JROTC. Some may be taught by college professors, but most are taught by members of the North Penn High School faculty who have been certified to teach the courses by the associated colleges. Taking an on-campus dual enrollment course eliminates the need to travel, and books are provided by the high school. Tuition is still the responsibility of the student. Please refer to the Business, FCS, and Science sections in the Program of Studies for specific information regarding eligible dual enrollment courses.

**Off-campus program enrollees need to:**
1. Be a high school senior and have a NPHS parking permit.
2. Be making satisfactory progress toward fulfilling high school graduation requirements.
3. Have scored at or above proficiency on two of three Keystone Exams.
4. Follow the college’s policy regarding behavior and attendance.
5. Maintain a weighted grade point average of 4.0 in the applicable subject area of study in high school.
6. Earn a minimum grade of “C” in each dual enrollment course at the college level to earn college credit.
7. Accept responsibility for registering and paying for the courses, as well as purchasing required books.
8. Meet for class on the college’s campus at the scheduled time indicated in the college catalog.
9. Notify and receive approval from student’s counselor of his or her intention to participate in the program prior to course registration.

**On-campus program enrollees need to:**
1. Meet any stipulated course prerequisites.
2. Select the designated course number during course selection.
3. Be aware of their responsibility for the tuition cost associated with the specific course (typically about $325 for each course).
4. Earn a minimum grade of “C” in each dual enrollment course to earn college credit.
5. Accept responsibility for completing associated paperwork and paying the tuition.

**College Athletic Participation**

Students planning to participate in an athletic program at the National Collegiate Athletic Association (NCAA) Division I or Division II level in college must meet the NCAA Freshmen-Eligibility Standards.

**Core Courses**

- **NCAA Division I and II each require 16 core courses.**
  - See the chart below for the breakdown of these 16 core-course requirements.
  - Be sure to look at North Penn High School’s list of NCAA-approved core courses on the Eligibility Center’s web site to make certain that courses being taken have been approved as core courses. The web site is [www.eligibilitycenter.org](http://www.eligibilitycenter.org).

These courses are identified throughout the program of studies via the ( ) symbol.

**Test Scores**

- **Division I** has a sliding scale for test score and grade-point average. The sliding scale for those requirements is available at the web site: [www.eligibilitycenter.org](http://www.eligibilitycenter.org).
- **Division II** has a minimum SAT score requirement of 820 or an ACT sum score of 68.
- The SAT score used for NCAA purposes includes only the critical reading and math sections. The writing section of the SAT is not used.
- All SAT and ACT scores must be reported directly to the NCAA Eligibility Center by the testing agency. Test scores that appear on transcripts will not be used. When registering for the SAT or ACT, use the Eligibility Center code of 9999 to make sure the score is reported to the Eligibility Center.

**Grade-Point Average for NCAA**

- Only core courses are used in the calculation of the unweighted grade-point average.
- **Division I** unweighted grade point average requirements are listed on the web site: [www.eligibilitycenter.org](http://www.eligibilitycenter.org).
- **The Division II unweighted** grade point average requirement is a minimum of 2.00.

**DIVISION I REQUIREMENTS—16 CORE COURSES**

<table>
<thead>
<tr>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 YEARS OF ENGLISH</td>
</tr>
<tr>
<td>3 YEARS OF MATHEMATICS (ALGEBRA I OR HIGHER)</td>
</tr>
<tr>
<td>2 YEARS OF NATURAL/PHYSICAL SCIENCE</td>
</tr>
<tr>
<td>(1 YEAR OF LAB IF OFFERED BY HIGH SCHOOL)</td>
</tr>
<tr>
<td>1 YEAR OF ADDITIONAL ENGLISH, MATHEMATICS, OR NATURAL/PHYSICAL SCIENCE</td>
</tr>
<tr>
<td>2 YEARS OF SOCIAL SCIENCE</td>
</tr>
<tr>
<td>4 YEARS OF ADDITIONAL COURSES (FROM ANY AREA ABOVE, FOREIGN LANGUAGE OR</td>
</tr>
<tr>
<td>NONDOCTRINAL RELIGION/PHILOSOPHY)</td>
</tr>
</tbody>
</table>

**DIVISION II—16 CORE COURSES**

<table>
<thead>
<tr>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 YEARS OF ENGLISH</td>
</tr>
<tr>
<td>2 YEARS OF MATHEMATICS (ALGEBRA I OR HIGHER)</td>
</tr>
<tr>
<td>2 YEARS OF NATURAL/PHYSICAL SCIENCE</td>
</tr>
<tr>
<td>(1 YEAR OF LAB IF OFFERED BY HIGH SCHOOL)</td>
</tr>
<tr>
<td>3 YEARS OF ADDITIONAL ENGLISH, MATHEMATICS, OR NATURAL/PHYSICAL SCIENCE</td>
</tr>
<tr>
<td>2 YEARS OF SOCIAL SCIENCE</td>
</tr>
<tr>
<td>4 YEARS OF ADDITIONAL COURSES (FROM ANY AREA ABOVE, FOREIGN LANGUAGE OR</td>
</tr>
<tr>
<td>NONDOCTRINAL RELIGION/PHILOSOPHY)</td>
</tr>
</tbody>
</table>

**Flexible Scheduling Options**

**For Seniors:**

**NO SCHOOL PERIOD 1** NSP1

Seniors who have achieved proficiency on all three Keystone Exams (Algebra, Biology, and Literature) and have earned a minimum of 18 credits by the end of their junior year are eligible to request late arrival. Seniors selecting this option need to provide their own transportation to NPHS, commit to reading the electronic daily bulletin to keep abreast of announcements, and begin their day at the start of 2nd period following Home Office check-in for daily attendance.

**NOTE:** Seniors can select both NSP1 and NSP8 if their graduation requirements can be met.
NO SCHOOL PERIOD 8  NSP8
Seniors who have achieved proficiency on all three Keystone Exams (Algebra, Biology, and Literature) and have earned a minimum of 18 credits by the end of their junior year are eligible to request early dismissal. Seniors selecting this option need to provide their own transportation from NPHS and end their day following 7th period.

NOTE: Seniors can select both NSP1 and NSP8 if their graduation requirements can be met.

CONCURRENT ENROLLMENT
Seniors who have achieved proficiency on all three Keystone Exams (Algebra, Biology, and Literature) and have earned a minimum of 20 credits by the end of their junior year are eligible to request concurrent enrollment. See page 7 for additional information.

For Sophomores and Juniors:

LATE START – LATE ENDING  NCP1
Sophomores and juniors who prefer to begin their day at the start of 2nd period daily and end their day at 3:35 PM on Mondays, Wednesdays and Thursdays may request this option. These students will be scheduled into a year-long required course which replaces a class that would have met daily during 1st period. The classes are 75 minutes in length and do not meet on Tuesdays and Fridays.

The ending times on Mondays, Wednesdays, and Thursdays are intended to coincide with days that the late buses run. Students selecting this option need to provide their own transportation to NPHS, commit to reading the electronic daily bulletin to keep abreast of announcements, and begin their day at the start of 2nd period following Home Office check-in for daily attendance.

Students will need to schedule a course that regularly meets 6 periods per cycle in English, Social Studies, or Biology. Course availability is dependent upon staffing availability as well as student enrollment. The class time commitment between 2:20–3:35 PM precludes athletes and most club participants from selecting this option. For additional information, interested families may contact their student’s counselor.

Honor Roll
Students who maintain an unweighted average of 3.0 will be named to the honor roll at North Penn. Students who maintain an unweighted average of 3.8 will be named to the distinguished honor roll at North Penn. The honor roll formula is based upon the number of periods scheduled by the student rather than on the credits attempted and includes all major and minor subjects.

The honor roll calculation is unweighted and based solely on the letter grades earned in every subject on the report card. For the purposes of honor roll calculation,

- A+ = 4.3
- A = 4.0
- B+ = 3.7
- B = 3.0
- C = 2
- D = 1
- F = 0

Independent Study
Students in grade 12 interested in completing an independent study project should discuss this interest with a potential sponsoring teacher. Wherever possible, independent study projects should culminate in a “product” or “service” which can be shared with others upon completion. Once a plan is agreed upon, a written proposal signed by the student and parents, is submitted to the teacher. Upon receipt of the proposal the sponsoring teacher and the student will prepare a course outline including goals and objectives to be completed by stated deadlines. The amount of credit to be awarded, and the procedure for arriving at a grade must also be stated.

Independent study proposals must be student specific and approved before May 1st of the year preceding the project. The awarding of course credit for the project is contingent upon the approval of the appropriate department chairperson, the student’s assigned counselor, and the principal. A limited number of students per year may be approved for independent study in any given subject area. For further information students should contact their counselor.

Levels of Course Difficulty
All major courses are assigned a numerical level (6.5, 6.0, 5.0, or 4.0) which indicates the level of difficulty of the course. Course curricula are aligned with state standards at all levels.

Level 6.5 courses are Advanced Placement courses and culminate in the administration of the Advanced Placement exam. The curriculum in AP courses has been authorized by College Boards as being equivalent to a college level curriculum. Students who enroll in AP courses are expected to perform at a high level and are expected to use higher level thinking skills and demonstrate an advanced level of proficiency.

Level 6.0 courses are honors courses intended for high achieving students who desire a challenging curriculum and a fast paced course. Critical thinking, problem solving, projects of superior craftsmanship or artistry, and research skills are emphasized. Students who accept the challenge of level 6.0 courses typically have exceptional reading, writing, and mathematical ability.

Level 5.0 courses are designed for the student who has a good command of the basic skills and is motivated to attain a proficient academic record. College-bound students are recommended to schedule level 5.0 courses (or above) particularly in the disciplines related to their intended college major.

Level 4.0 courses move at a moderate pace and include time for review and remediation as needed. Emphasis is placed on continued development of basic skills. Many level 4.0 courses are adequate for college-bound students.

North Penn High School encourages students to enroll in courses at the highest level of course difficulty in order to achieve academic success.

Criteria for selecting appropriate level of course difficulty:

1. To remain in a level 6.0 or 5.0 course for the next school year, students should have a “C” average.
2. To move up one level (from 4.0 to 5.0 or from 5.0 to 6.0) for the next school year, students should have a “B+” or higher average in the current course. Students who have a “B++” or higher are encouraged to select the next higher level course.
3. Moving up two levels (from 4.0 to 6.0) is not recommended.

Because course selection procedures are typically carried out in February of each school year, performance criteria are to be based upon grades earned for the first two marking periods of the school year. If the student’s third marking period grade is not consistent with the grades for the first two marking periods, any change of course selection is to be initiated before May 6, 2016.

Prerequisites
Prerequisites focus upon courses which must be taken and the level of performance which must be achieved in those courses
in order for a student to qualify to enroll in a given course. Course prerequisites, where required, are indicated following the description of each course in this booklet.

**Report Card Procedure**

Students receive academic reports eight times each year. A marking period spans a nine-week period with interims accessible on Home Access Center at the midpoint of each marking period. Report cards will be accessible on Home Access Center.

<table>
<thead>
<tr>
<th>THE FOLLOWING LETTERS ARE USED FOR REPORTING:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+ 97-100 I INCOMPLETE</td>
</tr>
<tr>
<td>A 90-96 P PASSING (Satisfactory grade in courses that are marked by Pass/Fail only)</td>
</tr>
<tr>
<td>B+ 87-89 M MEDICAL EXCUSE</td>
</tr>
<tr>
<td>B 80-86 N NO GRADE GIVEN</td>
</tr>
<tr>
<td>C+ 77-79 WP WITHDREW - PASSING</td>
</tr>
<tr>
<td>C 70-76 WF WITHDREW - FAILING</td>
</tr>
<tr>
<td>D 65-69</td>
</tr>
<tr>
<td>E 50-64 (Final course grade only)</td>
</tr>
<tr>
<td>F BELOW 65 (Final course grade below 50)</td>
</tr>
</tbody>
</table>

**Note:** If an incomplete grade is not made up within three weeks of the end of a marking period, the grade will be changed to an “F.”

**Course Withdraw Procedures**

The following are the rules for withdrawing from a course:

If a student withdraws from a course that meets daily after the interim of the first marking period, the course will be reflected on the report card and transcript with either a WP or a WF.

If a student withdraws from a course that meets less than 6 times a cycle after the first marking period, the course will be reflected on the report card and transcript with either a WP or a WF.

**Marks & Symbols**

Refer to the following chart (Legend) below to identify the meaning of marks and symbols throughout the Program of Academic Studies.

**Summer Assignment Required**

The following courses have a requirement for either reading or work packets that needs to be completed during the summer prior to the opening of school. Specific assignments for the coming school year can be found on the NP website after June 1st.

<table>
<thead>
<tr>
<th>COURSE NAME</th>
<th>COURSE NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGLISH 9</td>
<td>0095C, 0095, 0096, 0096P</td>
</tr>
<tr>
<td>ENGLISH 10 KEYSTONE LITERATURE</td>
<td>0004CK, 0004K, 0005K, 0006K, 0006GK</td>
</tr>
<tr>
<td>ENGLISH 11</td>
<td>0014C, 0014, 0015, 0016</td>
</tr>
<tr>
<td>AP ENGLISH [12] LITERATURE AND COMPOSITION</td>
<td>0027</td>
</tr>
<tr>
<td>BRITISH LITERATURE 12</td>
<td>0823, 0824, 0825, 0826</td>
</tr>
<tr>
<td>AMERICA IN HISTORY 3 H</td>
<td>1006</td>
</tr>
<tr>
<td>AP WORLD HISTORY</td>
<td>1117</td>
</tr>
<tr>
<td>WORLD HISTORY HONORS</td>
<td>1116</td>
</tr>
<tr>
<td>AP U.S. HISTORY</td>
<td>1007</td>
</tr>
<tr>
<td>AP GOVERNMENT: US &amp; COMPARATIVE</td>
<td>1227</td>
</tr>
<tr>
<td>AP PSYCHOLOGY</td>
<td>1327</td>
</tr>
<tr>
<td>AP EUROPEAN HISTORY</td>
<td>1527</td>
</tr>
<tr>
<td>AP MACRO/MICRO ECONOMICS</td>
<td>1627</td>
</tr>
<tr>
<td>ALGEBRA 2</td>
<td>2315, 2315E, 2315C, 2316</td>
</tr>
<tr>
<td>ADVANCED BIOLOGY</td>
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<tr>
<td>AP BIOLOGY</td>
<td>3027</td>
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<tr>
<td>AP LATIN</td>
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<tr>
<td>SPANISH 4 H</td>
<td>4246</td>
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<tr>
<td>AP SPANISH LANGUAGE 5</td>
<td>4257</td>
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<tr>
<td>AP FRENCH LANGUAGE 5</td>
<td>4357</td>
</tr>
<tr>
<td>AP GERMAN LANGUAGE 5</td>
<td>4457</td>
</tr>
<tr>
<td>PORTFOLIO PREPARATION</td>
<td>6026</td>
</tr>
<tr>
<td>AP ART STUDIO: DRAWING</td>
<td>6027</td>
</tr>
<tr>
<td>AP ART STUDIO: 2-DIMENSIONAL DESIGN</td>
<td>6037</td>
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<tr>
<td>AP ART HISTORY</td>
<td>6047</td>
</tr>
<tr>
<td>AP MUSIC THEORY</td>
<td>6347</td>
</tr>
</tbody>
</table>

**Note:** Northbridge students have the same summer reading assignments as students in the Middle Schools and NPHS.
ART/VISUAL COMMUNICATIONS DEPARTMENT

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Level</th>
<th>Yr/Sem.</th>
<th>Pds/Cycle</th>
<th>Credit</th>
<th>Grade 9</th>
<th>Grade 10</th>
<th>Grade 11</th>
<th>Grade 12</th>
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<tbody>
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<td>x</td>
<td>x</td>
<td>x</td>
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<td>6004</td>
<td>Art 1</td>
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<td>Year</td>
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<td>x</td>
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<td>6005</td>
<td>Art 1 - Advanced Techniques &amp; Applications</td>
<td>5.0</td>
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<td>x</td>
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<td>6026</td>
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<td>x</td>
<td>x</td>
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<tr>
<td>6027</td>
<td>AP Studio Art: Drawing</td>
<td>6.5</td>
<td>Year</td>
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<td>1.0</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>26</td>
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<tr>
<td>6037</td>
<td>AP Studio Art: 2-Dimensional Design</td>
<td>6.5</td>
<td>Year</td>
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<td>x</td>
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<tr>
<td>6047</td>
<td>AP Art History</td>
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<td>Digital Photo 1</td>
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<td>Year</td>
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<tr>
<td>6077</td>
<td>AP Two-Dimensional Design: Photography Concentration</td>
<td>6.5</td>
<td>Year</td>
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<td>1.0</td>
<td>x</td>
<td>x</td>
<td>x</td>
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*: NCAA eligible  
* Regular Education option. (Students with an IEP should refer to page 55.)

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ENGLISH AS A SECOND LANGUAGE

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♦ NCAA eligible

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- NCAA eligible
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* NCAA eligible

# VIRTUAL HIGH SCHOOL COURSE EXAMPLES

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The courses listed above are examples of Virtual High School course offerings. Refer to Virtual High School on page 51 for more information about the program.
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### MINOR ELECTIVES

#### 2 Periods Per Cycle (Except As Noted)

**Art**
- Art Major (9 only)
- Related Fine Arts (9 only)
- Design & Illustration
- Ceramics 1 – Hand Building Ceramic Forms
- Ceramics 2 – Production [PR; 11 & 12 only]
- Ceramics 3 – Clay Design [PR; 12 only]

**Business Administration & Technology**
- Computer Applications 3 (9 only)
- Exploratory Business (9 only)
- Microcomputer Applications (PR, 4 pds.)
- Electronic Simulation Design
- Computing for College and the Workplace
- Multimedia Presentation (PR)
- Web Page Design (PR)

**English**
- Theatre Arts (9 only)
- Introduction to Acting
- S.A.T. Prep Course (10 & 11 only) (PR)
- Advanced Acting (PR)
- Designing for the Stage/Stage Crew
- Project Based Assessment (PR)

**Family & Consumer Science**
- FCS Minor (9 only)
- Child and Family Studies
- Independent Living
- Interior Design
- Food and Nutrition

**Health & Physical Education**
- Lifeguarding ($; PR; 11 & 12 only)

**Mathematics**
- Computer Programming
- S.A.T. Prep Course (PR; 10 & 11 only)
- Project Based Assessment (PR)

**Music**
- Related Fine Arts (9 only)
- Concert Band (PR)
- Chorus (PR)
- Orchestra (PR)
- Wind Ensemble

**Music (continued)**
- Contemporary Music
- Foundations of Music Theory & Technology (9 only)
- Music Technology 1
- Music Technology 2 (PR; 11 & 12 only)
- Music Career
- Solo Performers (PR)
- Audio Engineering

**Reading**
- Reading Support (9 only)
- Reading and Study Strategies

**Science**
- Project Based Assessment (PR)

**Technology & Engineering Education**
- Applying Technology Minor (9 only)
- Technical Drawing & Design Minor (9 only)
- Communications System
- Manufacturing & Construction
- Power Technology
- Mechanical Drawing
An 8-period day utilizing a 6-day cycle.
All students must schedule 42 periods per cycle.

### REQUIRED COURSES: GRADE 9

<table>
<thead>
<tr>
<th>MAJOR SUBJECTS</th>
<th>Periods/Cycle</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENGLISH 9</td>
<td>6</td>
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</tr>
<tr>
<td>SOCIAL STUDIES</td>
<td>6</td>
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</tr>
<tr>
<td>MATHEMATICS</td>
<td>6 OR 8</td>
<td>1.0 OR 1.3</td>
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<tr>
<td>SCIENCE - PHYSICAL</td>
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<tr>
<td>READING (FOR STUDENTS READING 1½ YEARS OR MORE BELOW GRADE LEVEL)</td>
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<tr>
<td>ESL (AS PRESCRIBED BY ESL TEACHER)</td>
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<table>
<thead>
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<th>MINOR SUBJECTS</th>
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<tr>
<td>HEALTH</td>
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<tr>
<td>PHYSICAL EDUCATION</td>
<td>2</td>
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<tr>
<td>COMPUTER APPLICATIONS 3</td>
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### ELECTIVE COURSES

<table>
<thead>
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<th>MAJOR SUBJECTS</th>
<th>FULL YEAR</th>
<th>CREDITS</th>
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<tr>
<td>JROTC - SCIENCE OF FLIGHT (3915) AT NPHS</td>
<td>6</td>
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<tr>
<td>ART MAJOR (6094)</td>
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<tr>
<td>INTRODUCTION TO BUSINESS (5594)</td>
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<tr>
<td>WORLD LANGUAGES: FRENCH 1 &amp; 2, GERMAN 1 &amp; 2, SPANISH 1 &amp; 2, JAPANESE 1 AT NPHS</td>
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<td>FCS MAJOR (6194)</td>
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<td>APPLYING TECHNOLOGY (5094)</td>
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<table>
<thead>
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<th>CREDITS</th>
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<tr>
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<td>ART (8600)</td>
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<td>BAND (8621)</td>
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<td>CHORUS (8622)</td>
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<tr>
<td>EXPLORATORY BUSINESS (8559)</td>
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<tr>
<td>FCS MINOR (8619)</td>
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<tr>
<td>ORCHESTRA (8623)</td>
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<tr>
<td>ORCHESTRA (8643)</td>
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<tr>
<td>RELATED FINE ARTS (8609)</td>
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<tr>
<td>FOUNDATION OF MUSIC THEORY &amp; TECHNOLOGY (8629)</td>
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<tr>
<td>TECHNICAL DRAWING AND DESIGN (8539)</td>
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</tr>
<tr>
<td>THEATER ARTS (8009)</td>
<td>2</td>
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</tr>
</tbody>
</table>

### NINTH GRADE CREDIT ALLOCATION

- 8 x cycle/year = 1.3
- 6 x cycle/year = 1.0
- 4 x cycle/year = 0.7
- 2 x cycle/year = 0.3

### Art/Visual Communications

**Major Elective**

**ART MAJOR**

**6095**

**Level 5.0** (Grade 9)  
(6 periods – 1 credit)

This course promotes and integrates art history, art criticism, aesthetics, and art production. It is for students who wish to continue their education in art and art related fields. In this course, the student will explore the elements and principles of art through drawing, painting, printmaking, and sculpture. Students will develop two and three dimensional art production techniques in a variety of mediums.

**Prerequisite:** Art Foundation II with a “B” or better

**Minor Electives**

**ART**

**8600**

(Grade 9)  
(2 periods – 0.3 credit)

This course is designed to promote the student’s growth in visual expression using two and three-dimensional art production techniques. Students expand on their study of the elements of art and principles of design which provide the foundation for organizing the content of their own creations. The study of art history, aesthetics, and criticism is incorporated to give a deeper meaning to the learning of art processes.

**RELATED FINE ARTS**

**8609**

(Grade 9)  
(2 periods – 0.3 credit)

This course combines components of art and music. Students explore the visual arts and music in the global experience. Topics include rock/pop history, modern art, audio visual technology, and careers in the arts.

### Business Administration and Technology

**Required Course**

**COMPUTER APPLICATIONS 3**

**8552**

(Grade 9)  
(2 periods – 0.3 credit)

This project based course provides students with the 21st century skills necessary for managing their digital lives. Students will develop advanced skills in word processing and spreadsheet development, including the graphical representation of data. Students will also explore, create, and design databases, digital imagery, and animations. Instruction emphasizes good digital citizenship and safe, ethical, and responsible online behavior.
Major Elective Offering

INTRODUCTION TO BUSINESS 5595
Level 5.0 [Grade 9] (6 periods – 1 credit)

In this course, students will explore the areas of Marketing, Economics, Personal Finance, Business Law, Accounting, International Business, Management and Entrepreneurship with heavy emphasis on personal finance concepts. Essential everyday math will be utilized throughout the class (i.e. percents, markup, interest, etc.) The stock market, outside resources, field trips, exploratory projects and videos are used to reinforce the ideas and concepts. This course will prepare the student for further study at a more advanced level.

Minor Elective Offering

EXEMPLARY BUSINESS 8559
[Grade 9] (2 periods – 0.3 credit)

This course introduces students to the world of business and will help prepare them for their roles as consumers, workers, and citizens. It provides students with the basic vocabulary of the business world and will also serve as a background for other courses they take in high school and college. The Big Ideas include: Savings and Investments Strategies, Economic Activity Decisions and Systems, Entrepreneurship, Marketing and Accounting.

English

Required Course Offerings

ENGLISH 9 (IFE) 0095C
[Grade 9] (6 periods – 1 credit)

Select one English 9 course offering from the options below:

ENGLISH 9 (IFE) Level 5.0 (IEP required) 0095C
ENGLISH 9 (IFE) Level 5.0 0095
ENGLISH 9 (IFE) Level 6.0 (Honors) 0096
ENGLISH 9 (IFE) Level 6.0 (High Potential) 0096P

All classes in grade 9 include composition, grammar, literature, and vocabulary. The composition program provides students with a variety of writing experiences with an emphasis on the writing process. The course also stresses sentence structure and the more difficult aspects of correct usage. Through the study of literature, students learn to appreciate both non-fiction and fiction and to understand and use literary terminology. In addition, a structured spelling and vocabulary program is included.

Minor Elective

THEATER ARTS 8009
[Grade 9] (2 periods – 0.3 credit)

This course is an introduction to monologues, dialogues, and other skills needed to create character types. Students are required to take part in writing, producing, and performing short skits. Participants will develop an appreciation for theater arts and acquire an ability to critique various elements of a performance. Students will become familiar with techniques and materials used by professionals in the performing arts.

Family and Consumer Sciences

Major Elective

FCS MAJOR 6195
Level 5.0 [Grade 9] (6 periods – 1 credit)

This course involves an in-depth study of the areas of family and consumer science including dietary concerns and nutrition, food preparation, career exploration, consumerism, intergenerational topics, clothing care, and project construction. Class topics are reinforced by numerous hands-on experiences in the family and consumer science classroom and computer labs.

Minor Elective

FCS MINOR 8619
[Grade 9] (2 periods – 0.3 credit)

For the students who would like to take FCS Major but cannot fit it into their schedules, this course is the answer. Selected topics from the FCS Major curriculum will be included. Class topics are reinforced by numerous hands-on experiences in family and consumer science labs.

Gifted

GIFTED SEMINAR 9 8090
[Grade 9] (2 periods – 0.3 credit)

This course is available to students who have a gifted IEP. Gifted Seminar is an interdisciplinary elective course whose skill based curriculum is process-rather than content-focused. The framework of this process centered curriculum is constructed around the exploration of specific themes. The course provides the students with learning experiences that are both individualized and academically challenging. It will employ a variety of instructional strategies that will support students in the development of their own knowledge while fostering an environment where students can build on their individual capabilities, talents and creativity.

Prerequisite: High level reading, math, social studies, and science skills

Health & Physical Education

Required Course Offerings

HEALTH 7290
[Grade 9] (2 periods – 0.3 credit)

Some of the units of study included in the health curriculum are human growth and development, skeletal and muscular systems, wellness, nutrition, and physical fitness. Health instruction emphasizes awareness of healthful practices and decisions leading to a wholesome, productive life.

PHYSICAL EDUCATION 7090
[Grade 9] (2 periods – 0.3 credit)

Physical activities help to improve students’ basic skill levels as they are motivated to attain physical fitness levels. Each student must meet uniform and participation requirements.

ADAPTED PHYSICAL EDUCATION 7020
[Grade 9] (2 periods – 0.3 credit)

This course is offered for those students who, for medical reasons, need special physical activities.

Mathematics

The mathematics program offers a variety of courses designed to accommodate and appropriately develop mathematical proficiency. Courses within the middle school are part of the mathematical sequence in which students make the transition from arithmetic skills and concepts to the more abstract study of algebra and geometry. All courses taught within the mathematics program will include skills developed through a study of concepts, real-world applications, and problem solving experiences.
### Required Course Offerings

**ALGEBRA 1 (IFE) [Grade 9]**

Select one math course offering from the options below:

<table>
<thead>
<tr>
<th>Course Offerings</th>
<th>Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALGEBRA 1 (IFE) [Grade 9]</strong></td>
<td>2105</td>
<td>1.0</td>
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</tbody>
</table>

This course is offered to students who have demonstrated an understanding of pre-algebraic concepts. It develops basic algebraic concepts, principles, and manipulations. This course will meet for 6 periods per cycle and is designed to cover the Algebra 1 curriculum over a two year period. It will culminate with the Keystone Algebra Exam at the end of the second year.

**ALGEBRA 1: OPERATIONS AND EQUATIONS (IFE) [Grade 9]**

This course is specifically designed for students who test at the below basic level on the 8th grade PSSA in mathematics. Students will be assigned to this course based on multiple evaluative criteria. This course develops basic algebraic concepts, principles, and manipulations. This course will meet for 8 periods per cycle and is designed to cover the Algebra 1 curriculum over a two year period. It will culminate with the Keystone Algebra Exam at the end of the course.

**ALGEBRA: FUNCTIONS AND DATA REPRESENTATIONS (IFE) [Grade 9]**

This course is specifically designed for students who have successfully completed Algebra- Operations and Equations 6.0. This course will continue to develop algebraic concepts, principles and manipulations. Major topics include linear functions, coordinate geometry, and data analysis. It will culminate with the Keystone Algebra Exam at the end of the course.

**GEOMETRY (IFE) [Grade 9]**

This course includes the study of plane and solid figures, similarity, congruence, postulates, theorems, proofs, constructions, areas and volumes. The concepts of space (solid) geometry are introduced early in the course and used thereafter. Finally, the student is introduced to elementary ideas of plane analytical geometry.

**ALGEBRA 2 (IFE) [Grade 9]**

This course includes a study of real and complex numbers, arithmetic and geometric sequences, and probability. Students will investigate the behavior of polynomial, exponential, logarithmic and radical functions, as well as solve equations, inequalities and systems when applicable. Operations with rational expressions will also be explored.

### Music

#### Minor Electives

**MUSIC PERFORMANCE CLASSES:**

<table>
<thead>
<tr>
<th>Course Offerings</th>
<th>Duration</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAND</td>
<td>2 periods – 0.3 credit</td>
<td>8621</td>
</tr>
<tr>
<td>BAND</td>
<td>4 periods – 0.7 credit</td>
<td>8641</td>
</tr>
<tr>
<td>CHORUS</td>
<td>2 periods – 0.3 credit</td>
<td>8622</td>
</tr>
<tr>
<td>CHORUS</td>
<td>4 periods – 0.7 credit</td>
<td>8642</td>
</tr>
<tr>
<td>ORCHESTRA</td>
<td>2 periods – 0.3 credit</td>
<td>8623</td>
</tr>
<tr>
<td>ORCHESTRA</td>
<td>4 periods – 0.7 credit</td>
<td>8643</td>
</tr>
</tbody>
</table>

A concert band (including a marching component), mixed chorus, and orchestra are available to qualified students as determined by audition or recommendations from previous instructors. Appropriate music is chosen for its appeal as well as its educational and aesthetic value. Some performances and rehearsals are scheduled outside of the school day as part of the curriculum.

#### SECTIONAL OR GROUP INSTRUCTION

All instrumental students will be assigned to a small group for lessons. The lessons are organized and function according to the needs of the student. Each group meets once per cycle and is scheduled on a rotating schedule from other regularly scheduled classes. Some remedial choral lessons are scheduled as determined by the instructor.

Many co-curricular ensembles are scheduled by audition from the larger performing groups. Co-curricular groups may include jazz band, wind ensemble, brass ensemble, percussion ensemble, treble chorus, male chorus, and string ensembles. Students will receive hands-on experience using music software in the music technology lab.

**NOTE:** In order to audition for a select ensemble, students must be enrolled in a performing ensemble class (band, orchestra, chorus). Rehearsals and performances inside and outside the regular school day are a requirement of membership.

**RELATED FINE ARTS**

<table>
<thead>
<tr>
<th>Course Offerings</th>
<th>Duration</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>8609</td>
<td>2 periods – 0.3 credit</td>
<td>8609</td>
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</table>

This course combines components of music and the visual arts in the modern era. Topics include music and art in film and advertising, audio-visual technology, and careers in the arts. Students will also receive hands-on experience with digital music and art in the technology lab using Garage Band, iMovie, and the Adobe Creative Suite.

**FOUNDATION OF MUSIC THEORY & TECHNOLOGY**

This course is designed for band, chorus and orchestra students considering a career in music. The course will explore the advanced concepts of music theory, composition, publishing, ear training, recording, sequencing and audio engineering using the middle school music technology labs. Students will utilize music software programs including Musition, Auralia, Finale, Home Studio, Piano Suite, Band in a Box and Smart Music as well as music on the internet. Some basic piano keyboard skills are helpful but not required.

**Prerequisite:** Students must also schedule 4 periods of band, chorus or orchestra in ninth grade.
JROTC at NPHS

THE SCIENCE OF FLIGHT & INTERCOMMUNICATION SKILLS
Level 5.0  
(6 periods – 1 credit) 3915

The Science of Flight course introduces the student to the exciting world of aerospace science. The course spans diverse subject areas within the Principles of Flight discipline to include: Basic Aeronautics, Aircraft Motion & Control, Meteorology, Human Flight Physiology & Engineering and Aircraft Design. Flight simulators and aircraft model construction are an integral part of the interactive course curriculum.

The Leadership and Intercommunication Skills course is taught in a team-based approach within the Science of Flight curriculum. Emphasis is placed on the importance of the communication and management process including citizenship/patriotism, community service, time management, organizational structures and framework, effective oral and writing skills and team building all designed to develop and hone the student’s leadership skills. Students have a hands-on opportunity to apply their leadership and interpersonal skills through assigned leadership positions responsible for the management of the JROTC corps of cadets. This course will count for an elective science credit.

Middle School students who opt to participate in JROTC will begin the school day at NPHS. Students will take two courses at NPHS; Science of Flight and either a math course, Physical Science or World Language course. Transportation to the appropriate middle school will take place after second period.

NOTE: All students must wear the provided Air Force uniform and comply with grooming requirements. Students are expected to wear the Air Force uniform once per week on Wednesdays.

Reading

LITERATURE EXPLORATIONS  
Level 5.0  
(6 periods – 1 credit) 4095

This course will provide instruction for students who continue to develop competency in literacy and critical analysis of text. Strategies and skills will be targeted through systematic instruction of comprehension, vocabulary, word study, analysis, and writing. A variety of complex texts will provide the opportunity for close reading, critical analysis, and constructed response. This course will be differentiated to meet the needs of all learners.

ENGLISH/STRATEGIC LITERACY 1  
Level 5.0 (IFE)  
0095A/4095A

This course will provide targeted, systematic instruction of comprehension strategies and skills for developing reading independence. Targeted literacy skills including comprehension, vocabulary, word study, and writing will be addressed through the use of technology, direct instruction and the use of both literature and informational text. A variety of complex texts will provide the opportunity for close reading, critical analysis, and constructed response. The various modes of writing, along with the writing process, will also be taught. Students in Strategic Literacy Level 1 and Level 2 may be combined in the same classroom since the program will be differentiated to meet the varied needs of learners.

ENGLISH/STRATEGIC LITERACY LEVEL 2  
Level 4.0 (IFE)  
0095B/4095B

This course will provide targeted, systematic instruction for comprehension strategies and skills for developing reading independence. Targeted literacy skills including comprehension, vocabulary, word study, and writing will be addressed through the use of technology, direct instruction and the use of both literature and informational text. Instruction will focus on the foundational skills for reading (phonemic awareness, phonics, decoding/encoding) in addition to comprehension, vocabulary and writing. A variety of challenging texts will provide the opportunity to apply these skills to critical analysis and response. The various modes of writing, along with the writing process, will also be taught. Students in Strategic Literacy Level 1 and Level 2 may be combined in the same classroom since the program will be differentiated to meet the varied needs of learners.

Science

Required Course Offerings

PHYSICAL SCIENCE (IFE)  
[Grade 9]  
(6 periods – 1 credit)

Select one Physical Science course offering from the options below:

PHYSICAL SCIENCE (IFE) Level 5.0 (IEP required)  
3095C

PHYSICAL SCIENCE (IFE) Level 6.0 (Honors)  
3096

PHYSICAL SCIENCE (IFE) Level 6.0 (High Potential)  
3096P

This course combines a standards-aligned study of physics and chemistry concepts with an exploration of laboratory and problem-solving skills. Utilizing an inquiry-based approach, students develop an understanding of topics such as force, motion, energy, atoms, and chemical bonding. Students learn to apply process skills to reach scientific conclusions based on data and evidence. These skills form the foundation for success in future laboratory science courses.

Social Studies

Required Course Offerings

AMERICA IN HISTORY 2 (IFE)  
[Grade 9]  
(6 periods – 1 credit)

Select one America In History 2 course offering from the options below:

AMERICA IN HISTORY 2 (IFE) Level 5.0 (IEP required)  
1095C

AMERICA IN HISTORY 2 (IFE) Level 6.0 (Honors)  
1096

AMERICA IN HISTORY 2 (IFE) Level 6.0 (High Potential)  
1096P

Course Description: The ninth grade Social Studies curriculum reflects the PA standards in civics and government, economics, history, and geography. These standards are integrated into the study of America’s history and culture. This American History course will include the following time frame: Reconstruction through World War II. Students will have the opportunity to continue to develop their geography skills, to study primary and secondary source documents, as well as to investigate how culture and events in history have shaped the country and world in which we live. The research process, integral to the Social Studies class, is included in this curriculum.

Special Education

See page 55 for more information.

Technology and Engineering Education

Courses in technology and engineering education reflect innovations, technological systems, resources, and products related to technology. Technology education explores the social, cultural, and environmental impacts of technological developments in the world. Opportunity is provided in classroom and laboratory settings for students to develop knowledge, skills, and attitudes regarding...
technology. The technology education program is designed to ensure that citizens are prepared to contribute to a competitive and complex technological society.

**Major Elective**

**APPLYING TECHNOLOGY MAJOR**

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<tr>
<th>Level</th>
<th>Credit</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>5.0</td>
<td>1</td>
<td>(6 periods – 1 credit)</td>
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</table>

This is a project-based course that focuses on the applications of the tools, materials, and processes in technology and engineering related disciplines, including bio-related, communications, construction, manufacturing and transportation systems. Students experiment the way materials, energy, and information are processed to solve technological problems. Topics include aerodynamics, automation, plastics/synthetics, energy production, robotics structural design/analysis, environmental and medical technology.

**Minor Electives**

**APPLYING TECHNOLOGY MINOR**

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<tr>
<th>Level</th>
<th>Credit</th>
<th>Description</th>
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<tbody>
<tr>
<td>5.0</td>
<td>0.3</td>
<td>(2 periods – 0.3 credit)</td>
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</table>

This is a project-based course that focuses on the applications of the tools, materials and processes in bio-related, communications, construction, manufacturing and transportation systems. Students are guided through activities which reflect developments in technology. Through problem solving activities, students design, fabricate, test, and present a variety of solutions to technical problems.

**TECHNICAL DRAWING AND DESIGN MINOR**

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<th>Level</th>
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<th>Description</th>
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<tr>
<td>5.0</td>
<td>0.3</td>
<td>(2 periods – 0.3 credit)</td>
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</table>

This introductory course in technical drawing and design includes freehand sketching, use of mechanical drawing instruments, computers to generate CAD (Computer Aided Drafting), and explore related careers. This course should be of interest to those students who may be considering the Engineering Academy at the high school or technical profession.

**Technical Career Center Cluster Experience**

For information on the program at the TCC, please turn to page 60.

**World Languages**

All students are encouraged to pursue the study of a world language, modern or classical. They are urged to complete a three to five year sequence of one language and in the high school may begin a second language for an additional sequence. Research has proven that world language students generally show improvement in their English skills and attain noticeably higher scores on the verbal portion of their SAT’s as well as college entrance exams. In practically every job situation in today’s shrinking world, the graduate with a world language background has a major advantage.

A student may begin the study of a world language in grade 8 by enrolling in one of four choices: French, German, Latin or Spanish. World language courses successfully completed are recorded on the official high school transcript. Credit toward high school graduation is earned beginning in 9th grade. Students will not be permitted to enroll in the same level of a language for a third time. It is recommended that students requesting the first year of a language have at least a “C” average in mainstreamed English for the preceding year in order to meet with success.

**MODERN LANGUAGE 1**

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<tr>
<th>Level</th>
<th>Credit</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>5.0</td>
<td>1</td>
<td>(6 periods – 1 credit)</td>
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</tbody>
</table>

In the first level of each of these languages, students are introduced to the four basic skills of language learning: listening, speaking, reading, and writing. Students spend much class time in listening speaking activities. Teachers emphasize the ability to produce the basic sounds of each language. Audio-visual aids such as tapes, recorded by native speakers, cue cards, and posters are used. Students are exposed to the culture and customs of each country through the use of films, internet access, stories, and songs.

Grammar is introduced as well as elementary vocabulary.

**MODERN LANGUAGE 1**

<table>
<thead>
<tr>
<th>Level</th>
<th>Credit</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>5.0</td>
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<td>(2 periods – 0.3 credit)</td>
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</table>

Select one Modern Language 2 course offering from the options below:

**MODERN LANGUAGE 2**

<table>
<thead>
<tr>
<th>Level</th>
<th>Credit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td>1</td>
<td>(6 periods – 1 credit)</td>
</tr>
</tbody>
</table>

The second year of world language study builds upon the first year’s program. Vocabulary development is much greater, including idiomatic expressions, more complicated sentence structure and additional verb tenses. Language patterns become more sophisticated. The study of culture and customs continues to be emphasized in both the target language and in English.

Students begin to read short stories and essays. They will write original paragraphs and short compositions in the target language while grammar and syntax continue to be taught as an inherent and important skill.

**Prerequisite:** “C” or higher in year 1

**LATIN 1**

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<thead>
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<th>Level</th>
<th>Credit</th>
<th>Description</th>
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<tbody>
<tr>
<td>5.0</td>
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Latin 1 is a beginning course in Latin grammar through which the student learns to read and write the language on an elementary level. It also introduces the student to the study of Roman civilization, and Greek and Roman mythology. Emphasis is placed on the contribution of Latin to the English language, thus helping to develop the student’s English verbal skills.

**Prerequisite:** “C” or higher in Latin 1

**LATIN 2**

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<tr>
<th>Level</th>
<th>Credit</th>
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<tbody>
<tr>
<td>5.0</td>
<td>1</td>
<td>(6 periods – 1 credit)</td>
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</table>

Latin 2 continues the study of Latin grammar and vocabulary. Readings are selected to introduce more advanced grammatical construction. Roman civilization, Greek and Roman mythology, and English word derivation also continue to be emphasized.

**Prerequisite:** “C” or higher in Latin 1
GRADES 10-12 COURSE DESCRIPTIONS

Art/Visual Communications

The Art Department offers a balanced and challenging art curriculum through the study, production and exhibition of art. Art is an integral part of life that teaches students to think critically and creatively in an increasingly global and visual society. Art encourages students to relate visual knowledge to other core subjects through problem solving and creative thinking. The goal is to create well rounded graduates prepared to meet the demands of the 21st century. Courses are designed for students who plan to continue their art education beyond high school as well as to provide a comprehensive exploration of art for all.

These courses are part of the visual arts sequential (K-12) program of studies which promotes and integrates art history, art criticism, aesthetics, and art production.

Major Electives

ART 1 (6 periods – 1 credit)
Level 4.0 6004
Level 5.0 6005

In this course the student will develop two-dimensional art production techniques using a variety of media. The student will apply the elements and principles of art to their pictorial designs and compositions. Art history, criticism and aesthetics will be studied through critiques and assessment. Portfolios will be developed and career options explored.

ART 2 – ADVANCED TECHNIQUES & APPLICATIONS 6015
Level 5.0 [Juniors & Seniors] (6 periods – 1 credit)

In this course students will be trained in a variety of mediums and techniques through advanced studio work in drawing, painting and printmaking. They will learn to consider the aesthetic consequences of their technical decisions. Students will develop research, writing and analytical skills that will strengthen their understanding of relationships between art history and the making of works of art. The skills and cultural knowledge acquired will serve students throughout their lives as thinking individuals and artists.

Prerequisite: Art 1 with a “C” average or higher

PORTFOLIO PREPARATION ✡ 6026
Level 6.0 (Honors) [Juniors & Seniors] (6 periods – 1 credit)

This course is designed for students considering continuing their education in art or seeking employment in an art-related field. Development of skills and knowledge in observational drawing and painting, with continued emphasis on higher level design and composition skills is the focus of this course. Students receive instruction in the preparation of a professional portfolio. The course content incorporates projects which meet current guidelines for admission to art schools and art-related fields in industry.

Prerequisite: One year of Art Major having earned a “B” or higher

Note: Acceptance into this course is pending the outcome of a portfolio review prior to March 1.

AP STUDIO ART: DRAWING ✡ 6027
Level 6.5 [Juniors & Seniors] (6 periods – 1.0 credit)

The AP Studio Art course is for students who wish to complete college-level art experiences while still in high school and to potentially obtain college credit by scoring well on the Advanced Placement Exam. Instead of a written exam, Studio Art students are required to produce an art portfolio for evaluation. The portfolio requires students to demonstrate their understanding and abilities in three aspects of art: quality, concentration, and breadth. This course is designed for highly motivated students considering continuing their education in art or an art related field. Students will use a wide range of approaches and media to obtain mastery in drawing. A variety of means, including light and shade, rendering of form, composition and the illusion of depth will be addressed through a variety of media, including painting, printmaking, mixed media, etc.

Prerequisite: Enrollees must have earned an “A” in Art 1 (6004), a “B” or better in Art 1 (6005). In addition the student must submit:

• A written application form and portfolio review showing mastery of specific art techniques and media must be provided for review by the NPHS Art department prior to March 1. Acceptance into the course is pending the outcome of the review.

• Application forms may be obtained in the Art Department prior to March 1.

AP STUDIO ART: 2-DIMENSIONAL DESIGN ✡ 6037
Level 6.5 [Juniors & Seniors] (6 periods – 1.0 credit)

This AP Studio Art course is for students who wish to complete college-level art experiences while still in high school and to potentially obtain college credit by scoring well on the Advanced Placement Exam. Instead of a written exam, Studio Art students are required to produce an art portfolio for evaluation. The portfolio requires students to demonstrate their understanding and abilities in three aspects of art: quality, concentration, and breadth. This course is designed for highly motivated students considering continuing their education in art or an art related field. 2-D Design involves purposeful decision-making about using the elements and principles of art in an integrative way. In addition to drawing and painting, any 2-D medium may also be included, but not limited to illustration, graphic design, digital imaging, and photography.

Prerequisite: Enrollees must have earned an “A” in Art 1 (6004), a “B” or better in Art 1 (6005). In addition the student must submit:

• A written application form and portfolio review showing mastery of specific art techniques and media must be provided for review by the NPHS Art department prior to March 1. Acceptance into the course is pending the outcome of the review.

• Application forms may be obtained in the Art Department prior to March 1.

AP ART HISTORY ✡ 6047
Level 6.5 (6 periods – 1.0 credit)

This year-long Advanced Placement course provides high achieving students with a learning experience equivalent to a college level introductory art history survey course. The course involved critical thinking and will develop an understanding and knowledge of diverse historical and cultural context of architecture, sculpture, painting, and other media. In this course, students examine and critically analyze major forms of artistic expression from the past
and present. While visual analysis is a fundamental tool of the art historian, art history emphasizes understanding, how and why works of art function in context, considering such issues as patronage, gender, and the functions and effects of works of arts. A College level textbook is used.

SCULPTURE $ 6035
Level 5.0  (6 periods – 1 credit)

In this hands-on course, a variety of media will be used, such as plaster, clay, wire, and found objects. Techniques such as carving, modeling, and assemblage will be explored as students create their own three-dimensional projects. Students will learn the process of art criticism as they examine different types of sculptures. A studio fee of $15 is required to offset the cost of sculpture tools and materials.

ANIMATION 1 6045
Level 5.0  (6 periods – 1 credit)

In this course students will enter the creative world of two-dimensional animation through Adobe Flash CS5 and other hands-on experiences. As the director and producer, students will discover how the art elements, principles of design and concepts of animation are applied to the creation of their own multimedia animation that may integrate photography, drawings, video clips, text, sound, music, and other imagery. For major animation projects, students will present ideas in a well planned and written format for discussion with the teacher for prior approval. This course will require a variety of outside work, including: reading and writing assignments, research, or other assigned projects.

ANIMATION 2 6055
Level 5.0  [Juniors & Seniors] (6 periods – 1 credit)

This advanced animation course focuses on professional animation applications. Students will write, design and create a series of career based projects including an original Animation Short. This process will include working closely with a student design team to develop and refine ideas in a well planned and written format. This course will require a variety of outside work, including: reading and writing assignments, research, or other assigned projects. Animations will be created using the computer and Adobe Flash CS5.

DIGITAL PHOTO 1 6065
Level 5.0  (6 periods – 1 credit)

This photography course teaches students how to take successful photographs. This course uses a digital darkroom (i.e. computers) instead of the traditional wet-darkroom. Students learn to use scanners along with Adobe Photoshop to edit and print images. Acceptable cameras include 35mm film single-lens reflex (SLR), digital SLR, or a point-and-shoot camera with at least 6 megapixels (no camera phones). Students study the elements of art and principles of design as they develop their technical and compositional skills. Students study historical and contemporary photography using the process of art criticism.

Requirements:
1. Complete a photo contract obtained from either the art department or guidance counselors.
2. Return completed photo contract stapled to course selection card.
3. A 35mm film or digital single-lens reflex camera with an in-lens light meter and manual control of aperture, shutter speed, and focus is recommended. Point-and-shoot cameras with at least 6 megapixels are acceptable. (No camera phones)
4. Students are required to purchase film and pay for film processing unless shooting with a digital SLR.

DIGITAL PHOTO 2 6075
Level 5.0  [Juniors & Seniors] (6 periods – 1 credit)

This advanced photography course focuses on professional photographic applications. Students will prepare a portfolio reflecting examples of advertising, corporate, editorial and fine arts photography to be used for admission to colleges or to pursue a photography related career. Work will be created using the computer and Photoshop as a digital darkroom.

Prerequisite: Students must have earned a “B” or higher in Digital Photo 1.

Requirements:
1. A 35mm film or digital single-lens reflex camera with an in-lens light meter and manual control of aperture, shutter speed, and focus is required. (No point-and-shoot cameras)
2. Students are required to purchase film and pay for film processing unless shooting with a digital SLR.

AP TWO-DIMENSIONAL DESIGN: PHOTOGRAPHY CONCENTRATION 6077
Level 6.5  [Seniors] (6 periods – 1 credit)

This is an advanced course for students to develop independent projects specific to their technical skills and aesthetic vision. A portfolio for college admissions or for the workplace will be developed and refined in this class.

Prerequisite: Student must have at least a “B” in Digital Photo 2.

Requirements:
1. A 35mm film or digital single-lens reflex camera with an in-lens light meter and manual control of aperture, shutter speed, and focus is required. (No point-and-shoot cameras)
2. Students are required to purchase film and pay for film processing unless shooting with a digital SLR.

ELECTRONIC ART & GRAPHIC DESIGN 6085
Level 5.0  (6 periods – 1 credit)

The computer is being used as a tool in many different industries but over the last few years, the use of the computer as the medium in the art world has increased greatly. With the development of newer and more reactive software, artists and designers can now emulate almost all mediums used in art. This course is an introduction and overview of some of these programs used in the graphic design world with an emphasis on the elements of art and principles of design, the fundamentals of any art course. The course uses Photoshop and Illustrator as its main focus with other supplemental programs.

Minor Electives

DESIGN AND ILLUSTRATION 8601  (2 periods – 0.3 credit)

In this course students will study drawing, color theory and techniques for applying and manipulating a variety of dry and wet media as it applies to graphic design and illustration.

CERAMICS 1 – HAND-BUILDING CERAMIC FORMS 8603  (2 periods – 0.3 credit)

In this first level course students gain a working knowledge of clay and glazes. Hand-building techniques of pinch, coil, slab and paddle will be developed. Students will be introduced to various glazing techniques and surface embellishments.
CERAMICS 2 – PRODUCTION 8604
[Juniors & Seniors] (2 periods – 0.3 credit)

Art, industry and science come together as students design functional consumer products through the use of the potters wheel and advanced hand building techniques. Also covered will be mold making, the coloring of clay through the use of oxides and carbonates and glaze applications used in industry.

Prerequisite: Ceramics 1 (8603) or Sculpture (6034)

CERAMICS 3 – CLAY DESIGN 8605
[Seniors] (2 periods – 0.3 credit)

Students will continue their study of ceramic media and design problems. Individuals will plan and analyze independent projects with the instructor as they continue to develop their skills.

Prerequisite: Ceramics 2

Business Administration and Technology

The major goals of the Business Administration and Technology Department are to prepare students for more advanced study of Business Administration, to prepare students for post-high school entry-level business positions, and to introduce students to computer applications. Economics in Practice may count as a semester Social Studies credit if taken during the senior year.

Major Electives

BUSINESS ADMINISTRATION 5535
Level 5.0 [Seniors] (6 periods – 1 credit)

This course is designed to present up-to-date, realistic information about American business to all students but especially those who are considering a Business major. Some of the topics covered include business organization, financial resources, international business, the stock market, entrepreneurship, labor/management relations, banking services, and legal regulations. Resource people, exploratory projects, and videos are used to reinforce the ideas and concepts presented in this course. Students may visit a successful business operation.

Students in this course have the opportunity to take advantage of a dual enrollment agreement with Gwynedd Mercy University. Gwynedd Mercy University has approved our curriculum and verified that it meets the requirements of their Principles of Accounting 1 Course (ACC 105). Students can choose to sign up for this dual enrollment agreement, pay a tuition fee of $400, which is a fraction of the normal credit cost at Gwynedd Mercy University, and earn 3 college credits upon successful completion of the course with a grade of “C” or better. These credits are transferable to any college that accepts Gwynedd Mercy University credits.

Prerequisite: Student must have earned a “C” or higher in Accounting 1.

Semester Electives

PERSONAL FINANCE 5828
Level 4.0 5824
Level 5.0 5825

This course gives students the knowledge and information they need to manage their money wisely and to make sound financial decisions. Students will acquire the information needed to obtain their financial goal. They will learn money management strategies; consumer purchasing strategies; banking and credit; finances of housing; fundamentals of investing in stocks, bonds, mutual funds, and real estate; protecting finances, and retirement planning. Students will complete case studies, learn about careers in finance, and create a financial portfolio.

ECONOMICS IN PRACTICE 5835
Level 5.0 (6 periods – 0.5 credit)

This course examines the theories of microeconomics through practical application. Students are involved in the organization, management and liquidation of a Junior Achievement student company. An experienced local business consultant assists the students with all phases of operation of their company. Students are challenged in the preparation of the annual report which is distributed to all stockholders. This course may be taken for Social Studies credit only during the senior year.

BUSINESS LAW & LEGAL PRACTICES 5845
Level 5.0 (6 periods – 0.5 credit)

Students are challenged to explore that part of the American legal system which deals primarily with business law. After covering the foundations of the legal system, students study contracts, torts, and consumer law. Students visit the court house, observe a trial and tour a correctional facility.

GLOBAL BUSINESS 5855
Level 5.0 (6 periods – 0.5 credit)

This course will provide a foundation for international business and the global business environment. Students will focus on international business, our global economy, cultural influences on business, importing and exporting, foreign exchange, international business finance, and legal agreements. Outside resources, exploratory projects and videos are used to reinforce the ideas and concepts.
MARKETING STRATEGIES  5865
Level 5.0 (6 periods – 0.5 credit)
This introductory course provides students with a working knowledge of the fundamental concepts of marketing. Students explore the process of planning and executing the development, pricing, promotion, and distribution of ideas, goods, and services. Students develop a marketing plan for a product or service of their choice. Students will gain hands-on experience using a virtual business-simulation to reinforce concepts covered in class.

Students in the 5.0 course have the opportunity to take advantage of a dual enrollment agreement with Gwynedd Mercy University. Gwynedd Mercy University has approved our curriculum and verified that it meets the requirements of their Principles of Marketing Course (BUS 207). Students can choose to sign up for this dual enrollment agreement, pay a tuition fee of $400, which is a fraction of the normal credit cost at Gwynedd Mercy University, and earn 3 college credits upon successful completion of the course with a grade of “C” or better. These credits are transferable to any college that accepts Gwynedd Mercy University credits.

SPORTS & ENTERTAINMENT MARKETING  5875
Level 5.0 (6 periods – 0.5 credit)
Sports and Entertainment are two of the most exciting and competitive businesses in the world. Sports and Entertainment Marketing is a subject to which all students can relate. Sports and entertainment are everywhere, not just in ballparks and theaters, but at schools, on television and radio, in stores, and on the Internet. This course will enable students to develop skills they need to be successful in this area of business. Students will use various technologies and simulations to apply the principles discussed in this course. They will have the opportunity to create their own marketing strategy for a sports franchise. This course may culminate with a tour of a major league sports facility.

Students in the 5.0 course have the opportunity to take advantage of a dual enrollment agreement with Gwynedd Mercy University. Gwynedd Mercy University has approved our curriculum and verified that it meets the requirements of their Sport Marketing Course (BUS 351). Students can choose to sign up for this dual enrollment agreement, pay a tuition fee of $400 which is a fraction of the normal credit cost at Gwynedd Mercy University, and earn 3 college credits upon successful completion of the course with a grade of “C” or better. These credits are transferable to any college that accepts Gwynedd Mercy University credits.

ENTREPRENEURSHIP  5885
Level 5.0 (6 periods – 0.5 credit)
This course will help students to better understand what it is like to be an entrepreneur. Using the internet, simulations, and the local business community, students will be exposed to the many concepts of the entrepreneurial process. The course will present entrepreneurship as a career path worthy of consideration requiring students to develop a business plan for a business of their choice.

Students in the 5.0 course have the opportunity to take advantage of a dual enrollment agreement with Gwynedd Mercy University. Gwynedd Mercy University has approved our curriculum and verified that it meets the requirements of their Small Business Management Course (BUS 320). Students can choose to sign up for this dual enrollment agreement, pay a tuition fee of $400, which is a fraction of the normal credit cost at Gwynedd Mercy University, and earn 3 college credits upon successful completion of the course with a grade of “C” or better. These credits are transferable to any college that accepts Gwynedd Mercy University credits.

PERSONAL, ESTATE & CORPORATE LAW  5895
Level 5.0 (6 periods – 0.5 credit)
This course presents the principles of law that govern the activities of individuals and business. Topics will include personal and contract law, wills, estates and trusts, forms of business organizations and international law. Students may visit federal court to observe a trial.

Minor Electives

The technology portion of the business department’s program is built around sequential courses. To avoid repetition of topics already mastered and to avoid duplication of credit, some restrictions are warranted.

MULTIMEDIA PRESENTATIONS  8555
(2 periods – 0.3 credit)
Students will utilize Adobe Flash to create multimedia presentations and demonstrations. Skills learned in this course can be applied to the presentation of the Graduation Project.

Prerequisite: Computer Applications 3

ELECTRONIC SIMULATION DESIGN  8561
(2 periods – 0.3 credit)
Students will survey various computer games and simulation designs. Topics include design elements, user interfaces, simulation development, game rules, and game media. Students will use products and rudimentary game design to gain a hands-on understanding of computer gaming. Students will be expected to create a working game.

MICROCOMPUTER APPLICATIONS  8571
(4 periods – 0.7 credit)
Students will learn the basic components of various software packages, such as Microsoft Word, Excel, PowerPoint, and Access.

WEB PAGE DESIGN  8573
(2 periods – 0.3 credit)
The students in this class will learn different features of web page design such as heading styles, hyperlinks, tables, photo galleries, and customized themes using various current software packages; such as Dreamweaver. Students will create their own personal web site.

COMPUTING FOR COLLEGE & THE WORKPLACE  8575
(2 periods – 0.3 credit)
Computing for College and the Workplace will prepare students for the demands of college courses as well as the modern office. Emphasis is placed on integration and utilization of various components of the Microsoft Office Suite. Students will use the software package to create professional-grade reports and presentations.

Engineering Academy

The Engineering Academy represents a course sequence that addresses the educational needs of students planning on a post high school educational program in a two or four year college leading to a career in engineering or engineering technology. The courses offered in the Engineering Academy are part of pre-engineering program called Project Lead the Way. Project Lead the Way is a nationwide program that has aligned the participating schools with major universities across the country to provide a greater advantage...
to those students who feel they may be interested in pursuing a career in the engineering/architecture/design-related fields. The courses are designed to expose the student to the vast world of engineering through various experiential learning scenarios. Colleges that offer engineering as a major look favorably upon students that have taken the PLTW coursework as a part of the admission cycle. The Engineering Academy is for any 5.0 or 6.0 level student who is contemplating a career in Engineering. **Students who wish to enroll in The Engineering Academy must complete the application available from guidance counselors or from the Engineering Academy website at: www.northpennengineering.org.**

**AP COMPUTER SCIENCE PRINCIPLES**  2907  
Level 6.5  
(6 periods – 1 credit)

PLTW Computer Science empowers students to become creators, instead of merely consumers, of the technology all around them. The program engages students in collaborative projects that help them develop in demand computer science knowledge as well as transportable skills like creative thinking and communication. And whether they’re creating an online art gallery or using automation to process and analyze DNA sequence data, PLTW Computer Science students are seeing how their learning connects to the real world.

**Prerequisite:** Successful completion of Geometry AND either completed Algebra 2 5.0 with a B or better OR concurrently enrolled in a level 6.0 / 6.5 math course 

**Note:** This course does not fulfill the math credit requirements for graduation.

**INTRODUCTION TO ENGINEERING DESIGN (IED)**  5456  
Level 6.0  
(6 periods – 1 credit)

Introduction to Engineering Design is an introductory course that develops students’ problem-solving and critical-thinking skills and emphasizes the concepts of developing three-dimensional models and solid renderings of an object. Students focus on the application of visualization processes and tools provided by current, state-of-the-art computer hardware and software programs. IED emphasizes the design-development process of a product and how a product model is produced, analyzed, and evaluated, using a Computer-Aided Design System. Various design applications and possible career opportunities are explored and discussed in detail.

**Note:** This course is a requirement for Grade 10 students in The Engineering Academy.

**PRINCIPLES OF ENGINEERING (POE)**  5466  
Level 6.0  
(6 periods – 1 credit)

Principles of Engineering is a broad-based survey course designed to help students understand the field of engineering and engineering technology and its unlimited and diverse career opportunities. Students continue the development of problem-solving and critical-thinking skills required in their post-secondary pursuits and engineering careers. In exploring various and numerous engineering systems and manufacturing processes, the students also learn how engineers address concerns about the social and political consequences of technological changes. Through theory, guest speakers, field trips, and hands-on problem-solving activities, students experience firsthand what engineering is all about and are able to answer this question: “Is a career in engineering or engineering technology for me?”

**Prerequisite:** This course is highly suggested for grade 10 students or any first year student entering the Engineering Academy. This course can be taken simultaneously with Intro to Engineering Design or Digital Electronics.

**DIGITAL ELECTRONICS**  5476  
Level 6.0  
(6 periods – 1 credit)

Digital Electronics is a course of study in applied digital logic and is patterned after first semester digital electronics courses taught in two and four year post secondary schools typically found in watches, calculators, video games, and computers, and they utilize Boolean logic in the solution of problems. Smart circuits are present in virtually all parts of our lives, and their use is rapidly increasing, making DE a critical course of study for any student pursuing a career in engineering/engineering technology. Using the latest software systems available to industry, students also test and analyze simple and complex digital circuitry. Students design circuits; export their designs to a printed circuit autorouting program that generates printed circuit boards; and construct designs, using chips and other DE components. Course is for Grade 11 Engineering Academy students.

**Prerequisite:** This course is for grade 11 Engineering Academy students or those students who have successfully taken Intro to Engineering Design and Principles of Engineering courses. This course can be taken simultaneously with Principles of Engineering or Computer Integrated Manufacturing. Students who have completed Advanced Electronics may take this course.

**COMPUTER INTEGRATED MANUFACTURING (CIM)**  5486  
Level 6.0  
(Juniors & Seniors)  
(6 periods – 1 credit)

The Computer-Integrated Manufacturing course builds upon the solid-modeling and three-dimensional skills students developed in Introduction to Engineering Design. Students solve design problems, using state-of-the-art Computer-Assisted Design software programs. They evaluate their solutions, using mass-property analysis (relationship study of the design, function, and materials); determine appropriate modifications; and use prototyping equipment in producing a three-dimensional model of the solution. Students present the progress and results of their work through oral and portfolio-quality written communications. Course is for Grade 11 and 12 Engineering Academy students.

**Prerequisite:** Successful completion of courses associated with The Engineering Academy including Introduction to Engineering and Design and Principles of Engineering. This course can be taken simultaneously with Digital Electronics or Engineering Design and Development.

**ENGINEERING DESIGN AND DEVELOPMENT (EDD)**  5496  
Level 6.0  
(Seniors)  
(12 periods – 1.5 credit)

The knowledge and skills students acquire throughout their experiences in the North Penn Engineering Academy come together in Engineering Design and Development (EDD). They learn to research, design, and test solutions, ultimately presenting their research to the public at a Nanotechnology and Engineering Research Symposium offered at the end of the school year. Students apply the professional skills they have developed to document a design process to standards, completing Engineering Design and Development ready to take on any post-secondary program or career.

**Note:** Course is for Grade 12 Engineering Academy students as it is part of the final component of The Engineering Academy. Students enrolled in this course will have their lunch embedded in the twelve periods per cycle and should not select lunch on their course card. About twenty minutes will be allocated for student lunch daily.

**Prerequisite:** Successful completion of courses associated with The Engineering Academy including Introduction to Engineering and Design, Principles of Engineering, Digital Electronics and Computer Integrated Manufacturing.
English

The principal goal of all English courses is the mastery of the English language to improve communication skills and to foster the knowledge and appreciation of literature. Each course includes a structured study of grammar, composition, speech, and vocabulary which builds upon skills taught in the previous year. Students are expected to write four and five paragraph papers and longer written reports. The courses consist of the study of selected classics in fiction, poetry, drama, essays, and novels with an examination of genre and emphasis on World Literature in grade 10 and American Literature in grade 11. In grade 12, students will complete a semester of British Literature and choose a semester elective literature course based upon their reading interests. These courses are designed to incorporate reading, writing, grammar, and research skills, while affording the students the opportunity to study in a class focused on a particular theme, genre, or literary period. All semester literature offerings are available at the 4.0, 5.0, and 6.0 levels. Student choice in literature course selection aims to focus the student’s learning and bolster desire to achieve, while preparing students for the course format they will encounter in post-secondary education.

STUDENTS ENROLLED IN ALL LITERATURE CLASSES, AT ALL GRADES AND ACADEMIC LEVELS, WILL BE REQUIRED TO COMPLETE SUMMER READING ASSIGNMENTS. These assignments are due the first day class meets. Students whose 12th grade English classes are not scheduled until second semester are to submit their summer reading assignment to their home office assistant principal for credit the first day of school in September.

In the Level 4.0 course, students learn the practical side of research and project writing which involves formulating a thesis, following a process for gathering and reporting data, and reaching conclusions. Students are required to complete and present a project that incorporates knowledge from several different disciplines.

In level 5.0 and 6.0 courses, students are required to complete a critical paper based upon a literary work. This paper involves formulating a thesis rooted in literary criticism and developing an organized presentation which is a mixture of primary source examples, secondary critical opinions, student generated opinions, attitudes, and conclusions.

All students are required to complete their critical papers or research projects in order to pass for the marking period in which the assignment is given.

Required Course Offerings

ENGLISH 10 KEYSTONE LITERATURE *(6 periods – 1 credit)*

[Sophomores]

Select one English 10 course offering from the list below:

- **Level 4.0 (IFE) (IEP required for enrollment)** 0004CK
  - (8 periods – 1.3 credit)
- **Level 4.0 (IFE)** 0004K
  - (8 periods – 1.3 credit)
- **Level 5.0 (IFE)** 0005K
- **Level 6.0 (IFE) (Honors)** 0006K
  - (BOTH Level 5.0 and 6.0 are 6 periods – 1.0 credit)

ENGLISH 11 *(6 periods – 1 credit)*

[Juniors]

Select one English 11 course offering from the list below:

- **Level 4.0 (IFE) (IEP required for enrollment)** 0014CK
- **Level 4.0 (IFE)** 0014

ENGLISH LITERACY 12 *(6 periods – 1 credit)*

[Seniors]

- **Level 4.0 (IFE)** 0023
- **Level 4.0 (IFE) (Honors)** 0024

This course is designed for seniors not yet proficient on the Literature Keystone Exam. The focus of this course will be on the PA Language Arts standards. Successful completion of the course will fulfill the proficiency requirement for literature and the Literature Project Based Assessment (PBA) is embedded within the course.

ONE SEMESTER OF BRITISH LITERATURE 12 *(6 periods – 0.5 credit)*

[Seniors]

- **Level 4.0 (IFE) (IEP required for enrollment)** 0823
- **Level 4.0 (IFE)** 0824
- **Level 5.0 (IFE)** 0825
- **Level 6.0 (IFE) (Honors)** 0826

AND ONE SEMESTER OF SENIOR ELECTIVE LITERATURE OFFERINGS

With the exception of seniors taking the full-year AP English Literature and Composition or English Literacy 12, all seniors are required to complete one semester from the course offerings listed below, in addition to one semester of British Literature 12. All 5.0 and 6.0 electives include a critical paper requirement.

CONTEMPORARY AMERICAN LITERATURE *(6 periods – 0.5 credit)*

[Seniors]

- **Level 4.0 (IFE) (IEP required for enrollment)** 0873
- **Level 4.0** 0874
- **Level 5.0** 0875
- **Level 6.0 (Honors)** 0876

This semester elective course explores the responses of poets, playwrights, and authors to the social, cultural, and political climate of post-World War II America. Students are introduced to a variety of novels, short stories, poems, and plays that reflect the affluent and alienated 1950s, the turbulent social changes of the 1960s and 1970s, the materialism of the 1980s, and the revolutions of today’s technological and global era. Students consider the role of history in contemporary American literature and develop the reading, writing, research, and analytical skills necessary in literary study. Students completing this course will understand how literature is a mirror of our society and a vehicle through which to study and respond to the historical, social, cultural, and political contexts of our world.

MULTICULTURAL VOICES *(6 periods – 0.5 credit)*

[Seniors]

- **Level 4.0** 0884
- **Level 5.0** 0885
- **Level 6.0 (Honors)** 0886

This semester elective course introduces students to a varied selection of recognized authors of diverse cultural backgrounds. Students will be afforded the opportunity to analyze and explore, through class discussions and writings, the artistry of these authors as well as the connections between their works and their views of the world, given their cultural experiences. Students completing this course will become aware of the rich diversity of a multicultural world, while enriching their own cultural literacy.
COURSE DESCRIPTIONS (GRADES 10-12)

WOMEN’S VOICES 0894
[Seniors] (6 periods – 0.5 credit)
Level 6.0 0894
This semester elective course will expose students to a broad range of literary styles in both classic and contemporary women’s literature. Students will analyze and explore predominant themes in women’s literature. These themes include an examination of society’s historical and current expectations for women and the struggle to discover and express one’s individual voice. The multigenre course will also provide a forum for an inquiry into contemporary issues that will connect to students’ everyday experiences and will help each student to understand his or her own unique voice.

Major Electives

The following courses do not fulfill the English credit requirements for their stated grade level.

Level 6.5 (IFE) [Juniors] (6 periods – 1 credit)
The Advanced Placement course in English Language and Composition is designed for students who wish to receive college credit for high school English by scoring well on the Advanced Placement Language and Composition exam. This college-level course focuses on nonfiction and the rhetorical techniques and devices used by writers; however students also study major works of American fiction, including novels, dramas and poetry. The course trains students to develop skills in writing expository, analytical and argumentative essays based upon the readings of authors from different periods and disciplines.
Prerequisite: A “B” or higher in English 10 Honors or Gifted

AP ENGLISH [12] LITERATURE AND COMPOSITION 0027
Level 6.5 (IFE) [Seniors] (6 periods – 1 credit)
The Advanced Placement course in English Literature and Composition is designed for students who wish to receive college credit for high school English by scoring well on the Advanced Placement Literature and Composition exam. The college-level course examines fiction and poetry as well as works of recognized literary merit in translation. The focus in the analysis of literary texts is on the interpretation of theme and meaning and on the consideration of the resources of language: connotation, metaphor, irony, syntax, and tone. Writing assignments include essays on exposition and argument that use language effectively and organize ideas clearly, coherently and persuasively.
Prerequisite: A “B” or higher in English 10 Honors or AP

ENGLISH 10 GIFTED 0006GK
Level 6.0 (IFE) [Sophomores] (6 periods – 1 credit)
This 10th grade English course is available to identified gifted students in grade 10. This course will not be linked directly with any social studies offering.

Creative Writing is an elective, student-centered course designed for students who enjoy writing but who may not have extensive experience in creative writing. Through frequent writing exercises and in-class workshops, students will be encouraged to explore and develop their own voice, create effective imagery, build believable characterization, set up dynamic dialogue, and practice many other essential narrative techniques. In addition to fiction writing, students will also practice poetry writing, script writing, and creative non-fiction. Self-critique, group evaluation, and individual feedback from the teacher will help students expand on their writing skills.

CREATIVE WRITING 2 0145
Level 5.0 [Juniors & Seniors] (6 periods – 1 credit)
This course is open to juniors or seniors who are interested in pursuing creative writing in greater depth. Writing will occur within many different genres including fiction, poetry, and memoir. Assignments will be paced to allow student manuscripts to be extensively developed and revised. Students will also research, read, and study the work of master writers as well as the craftsmanship associated with the creation of effective fiction. In this course, students will be expected to journal on a daily basis and will turn in a portfolio of their work prior to the last two weeks of the marking period. Submissions of student work for publication will also be strongly encouraged.
Prerequisite: Student must have earned a “B” or higher in Creative Writing or teacher recommendation.

DRAMA MAJOR 0235
Level 5.0 [Juniors & Seniors] (6 periods – 1 credit)
Organized as a performing company, rehearsing both in class and outside of class, this course is production-oriented. It is recommended that students complete Introduction to Acting or Stage Crew prior to selecting this course. Students are involved in producing, directing, acting, dancing, constructing sets, costuming, lighting, sound design, makeup, and dramaturgy (research). Ensemble class productions, monologues, and scenes are performed. Students may also attend professional, university, and community performances. A minimum of two monologues and/or scenes and/or songs and a research portfolio project reflecting the student’s growth as a creative artist are required and may be used as a graduation project.
Note: Acceptance into this course is pending the outcome of an audition with the Drama Major instructor prior to April 1.

MAGAZINE JOURNALISM 0525
Level 5.0 (6 periods – 1 credit)
Students in this course are responsible for designing and producing the high school’s yearbook. Students with an interest in art, design, journalism, or photography are highly encouraged to participate. Students have the opportunity to acquire the knowledge and skills necessary for effective oral, written, and visual communication; furthermore, students gain practical experience in time management and human relations. To develop these skills fully, students have the opportunity to be actively involved in all components of magazine production, including layout and design, typography, graphic techniques, feature writing, and photography skills.
Prerequisite: Student must have earned a “B” or higher in 5.0 English or have a yearbook advisor recommendation.

NEWS JOURNALISM 0535
Level 5.0 (6 periods – 1 credit)
News Journalism is open to students interested in pursuing news-style journalism in greater depth and contributing to the school newspaper. Students study the principles of writing in-depth features, editorials, and news stories, with a focus on investigative
Students will also learn the fundamentals of page layout and design. To develop their critical thinking skills, students are asked to analyze contemporary writers in the print and broadcast media. In preparing their own stories, students develop their interviewing, research, organizational, and computer skills.

**Prerequisite:** Student must have earned a “B” or higher in English.

**Note:** Students may not take the year long journalism course upon completion of the semester course.

**PUBLIC SPEAKING 1**

**Level 4.0**  
(6 periods – 0.5 credit)

This semester course has been designed for ALL students who are interested in improving their speaking skills in front of an audience. Students prepare and deliver a variety of presentations for different purposes. At the same time, students learn about proper audience etiquette and utilize peer evaluation as an important tool for learning to communicate more effectively. Several units require research in the school’s library. This course provides a solid foundation for students in all career paths.

**Semester Electives**

The following courses do not fulfill the requirements for English credit; they earn elective credit.

**DEBATE 1**

**Level 5.0**  
(6 periods – 0.5 credit)

In this course students learn about and participate in different competitive academic debate formats used by high school and college debate teams. Included in this course are units on standard debate, cross-examination debate, and Lincoln-Douglas debate. Each unit requires extensive library research. Additionally, students practice and improve their communication skills. This course is recommended for students interested in joining the debate team or entering a communications, political science, or law-related field of study. It is recommended that students taking this course be enrolled in a Gifted, 6.0, or 5.0 English course. Students should be prepared to read and write at an accelerated level. The ability to work at a very independent level is a necessity.

**JOURNALISM**

**Level 5.0**  
(6 periods – 0.5 credit)

This course is designed for students interested in exploring the wide variety of writing styles within both print and broadcast journalism. The course introduces students to basic newswriting, as well as many other types of journalistic writing, including feature writing, opinion writing, review writing, sports reporting, and humor writing.
Family and Consumer Sciences

Family and Consumer Science courses are designed to provide students with skills in nutrition and wellness, human development and interpersonal relationships, parenting and child care, housing and home furnishings, fashion retailing and design, financial and consumer resource management, and career choices and employability. These skills will enable students to manage with reason and creativity the challenges across the life span of living and working in a global society.

Articulation Agreements with Montgomery County Community College enable students to receive acknowledgment for work completed at North Penn High School. These agreements apply to programs in Early Childhood Education. Courses with a single star adjacent to the course number are needed to satisfy the requirements in the articulation agreement for the Early Childhood Education program.

In order to fulfill the requirements for the selected program of specialization, students must successfully complete the starred courses for that program.

Major Electives

**CHILD DEVELOPMENT/ THE PRESCHOOL YEARS**

**Level 5.0** (6 periods – 1 credit)  
Students work with children in a variety of settings, supported by the study of child development from the prenatal stages, through infancy and early childhood, to age six. Knowledge of physical, intellectual, language, social and emotional development is applied through planning lessons, teaching, observing, and studying three- and four-year-olds in an actual play school situation. Additional experience includes working with special needs children. Journal writing, oral and written research projects and parenting simulation using an electronic doll give students opportunity for higher-level thinking and communication skills. Students are responsible for providing some supplies and materials.

**Prerequisite:** Child Development/The Preschool Years, Preschool Laboratory 1

**CLOTHING, TEXTILES, AND FASHION**

**MERCHANDISING**  
**Level 4.0** (6 periods – 1 credit)  
Clothing and images, color, fashion trends, fabrics, figure types, wardrobe planning and clothes shopping, apparel production and distribution are the major topics which are covered. Careers in...
the apparel industry are explored. This course is designed for the NON-sewer as well as the novice and more advanced sewer. Each year the classes studies four of the above topics in depth. During any particular marking period, the students complete a project on the subject they have just covered or sewed a project of their choice. The culminating event is a fashion show of constructed garments and ready-to-wear fashions. This course is recommended for students interested in fashion design or fashion merchandising careers. Students are responsible for providing some supplies and materials.

**ADVANCED CLOTHING, TEXTILES, AND FASHION MERCHANDISING**  
* Level 5.0  
  [Juniors & Seniors]  
  (6 periods – 1 credit)

This course is designed for the student considering a career in the fashion industry or who wants to expand their knowledge of fashion and merchandising and design. Students will investigate the structure of the fashion industry, explore costume history and fashion cycles, learn the process behind the creation of a clothing line and develop familiarity with the retail segment. The course will build upon fundamental construction techniques from the prerequisite class as students create fashion garments and accessories. Students are responsible for providing some materials and supplies for projects.

**FOOD SCIENCE**  
* Level 4.0  
  [Juniors & Seniors]  
  (6 periods – 1 credit)

Food Science is a survey course which allows students to learn about how food today is prepared, processed and preserved. Students will explore a variety of foods through experimentation, research and preparation. Students will learn the scientific principles of nutrition and food composition and how to apply them to their daily lives. The course emphasizes recent developments and trends in food safety, technology, nutrition, and food marketing and sensory qualities. A wide variety of food preparation offers the student a chance to demonstrate their understanding.

**CHALLENGES ACROSS THE LIFE CYCLE**  
* Level 4.0  
  (6 periods – 1 credit)

This focus on this class is to provide a foundation for students to acquire an understanding of human growth and development throughout the life span. Communication skills, career planning, personal development, and balancing work and family are fundamental components of this course. Students participate in the Partners Program, an education-based curriculum focused on marriage/family written by the American Bar Association.

### Minor Electives

**CHILD AND FAMILY STUDIES**  
* (2 periods – 0.3 credit)  
8610

In this course students examine issues related to parenthood and child care including decision making, preparation, rewards, and responsibilities. The course helps students understand child behavior and effective methods of relating to children. Pregnancy, childbirth, and the needs and characteristics of the developing child prior to birth to school age are covered. Reading readiness and children’s literacy are highlighted in this curriculum. A final project is a course requirement.

**INDEPENDENT LIVING**  
* (2 periods – 0.3 credit)  
8612

Students learn the essentials for living on their own which includes career choices, time management, money management, apartment/ dorm life, major purchases, decision making, selection of insurance, care of clothing, purchasing a car, relating to children and senior adults and meal management. Guest speakers from the community are actively involved in discussing the above topics with the students.

**INTERIOR DESIGN**  
* (2 periods – 0.3 credit)  
8613

Students are encouraged to plan a first apartment after learning the principles of good design. They work with a wide variety of floor plans, color schemes, window treatments, furniture styles, floor coverings and fabrics. With consideration given to their individual tastes, they combine these skills for a visual presentation of their decorated apartment. Students considering a career in the housing industry and in the field of interior design are encouraged to enroll in this course.

**FOOD AND NUTRITION**  
* (2 periods – 0.3 credit)  
8615

Foods that look good, taste good, and are good for you is the focus of this course. Students learn to evaluate and compare various foods and appliances. This course teaches students to use their resources efficiently in planning and preparing quick, nutritious snacks and meals, and develop healthy, life-long eating habits following the food pyramid guidelines. Students learn the basics of sanitation and safety, quick-cooking techniques, and the nutritional value of foods.

### Health & Physical Education

The health and physical education program provides all students with the skills and knowledge needed to promote lifetime wellness and fitness.

#### Required Courses for Graduation – Health Education

**HEALTH DECISIONS**  
* [Sophomores]  
  (2 periods – 0.3 credit)  
7200

* [Sophomores]  
  (2 periods – 0.3 credit)  
  (IEP Required)  
7203

This course is designed to help students make responsible decisions when confronted with major health issues that impact not only daily living but one’s future well-being. Topics of study include: 1) review of responsible decision making, 2) cardiovascular disease, cancer, and HIV/AIDS, 3) stress management and emotional control, 4) dietary goals and plans, 5) sexuality (reproductive health, abstinence and contraception, STD prevention and treatment, implications of teen parenthood, birth/parental care), 6) bystander emergency responsibilities, 7) organ and tissue donation, 8) vegetarianism.

**HEALTH AND SOCIETY**  
* [Juniors]  
  (2 periods – 0.3 credit)  
7210

* [Juniors]  
  (2 periods – 0.3 credit)  
  (IEP Required)  
7213

This course enables students to assess the impact that individual health decisions have upon others and understand the need for individual and societal intervention in the promotion of community health. Emphasis focuses on: 1) community and world health, 2) developing and maintaining healthy relationships, 3) dealing with health hazards (occupational, environmental and HIV/AIDS), 4) disability in society, 5) effects of substance abuse on others, 6) health careers, 7) healthful aging, and 8) consumer health.

#### Semester Electives – Health

**ANATOMY**  
* Level 5.0  
  [Juniors & Seniors]  
  (6 periods – 0.5 credit)  
7845

This course provides the student with an understanding of human
anatomy and physiology with major focus on the musculoskeletal system, the circulatory system, and the respiratory system. This course is open to juniors and seniors only.

ATHLETIC TRAINING 7854
Level 4.0  [Juniors & Seniors]  (6 periods – 0.5 credit)
This course will enable students to pursue an interest in athletic training, physical therapy or a related field in medicine. A major portion of the curriculum involves injury recognition, conditioning and rehabilitation.

EMERGENCY CARE 7864
Level 4.0  [Juniors & Seniors]  (6 periods – 0.5 credit)
This course provides the student with an understanding of self care techniques. Emphasis throughout the course is placed on prevention of accidents and illnesses, following the standards set by the American Red Cross in the areas of Standard First Aid and Community CPR. Each student has the opportunity to be certified in Standard First Aid and Community CPR. Students will be expected to purchase ARC textbooks, pocket face masks and pay for certification cards upon successful completion.

Required Courses for Graduation – Physical Education

SOPHOMORE PHYSICAL EDUCATION – AQUATICS 7900  (2 periods – 0.3 credit)
Aquatics is the physical education program for all sophomores. Major emphasis is on development of personal water safety skills and individual physical fitness. The Red Cross Beginner Level 2 swim test must be passed for credit and completion of this course. The student must remediate this course until competency is achieved. All classes are coeducational.

JUNIOR PHYSICAL EDUCATION – LIFETIME FITNESS 7910  (2 periods – 0.3 credit)
Lifetime Fitness is the required physical education program for all juniors. Major emphasis will be placed on the development of personal fitness techniques, fitness and training knowledge, improved skill levels, and a personal fitness plan. Students will learn how to use their own body weight and cardiovascular equipment along with the medicine balls, bands, free weights, and stability ball modalities to meet course competence. All classes are coeducational.

SENIOR PHYSICAL EDUCATION 7920  (2 periods – 0.3 credit)
Senior Physical Education will consist of four units that are covered throughout the entire school year. Each student will engage in all four units during the course of the year. These four units will provide students with the necessary knowledge to live a healthy and physically active lifestyle that transcends beyond the classroom. The units are comprised of the following areas:

ADVENTURE EDUCATION: This unit encompases the instruction of knot tying, basic rock climbing, rappelling, and climbing skills.
PERSONAL FITNESS ACTIVITIES: This unit is designed to promote recreational activities that encourage and motivate students to maintain a healthy lifestyle. The activities in this unit will provide a foundation for a healthy, physically active adulthood.
RACQUET SPORTS: This unit will teach students various racquet/paddle skills, rules, and gameplay strategies.
TEAM SPORTS: This unit will focus on a variety of sports that focus on game play, teamwork, and cardiovascular fitness. Students will learn rules and regulations along with strategies to improve team play.

ADAPTED PHYSICAL EDUCATION 7020  (2 periods – 0.3 credit)
The adapted program is designed for the exceptional student who is unable to participate in a regular physical education program. The program is varied to meet the individual needs, as recommended by the combined team of physician, physical educator, and parents of the student. An outline of the exceptional student’s program is to be initiated in writing by the physician through the school nurse and carried out by the physical education teacher.

LIFEGUARDING $ 7220  [Juniors & Seniors]  (2 periods – 0.3 credit)
This course will give students the opportunity to earn the American Red Cross Lifeguard certification necessary for employment at aquatic facilities. Due to the nature and depth of study involved, this course will meet for the entire academic year. This course encompasses the instruction of CPR, first aid and swimming skills necessary to handle aquatic emergencies. This course is a year long elective and will not count for required physical education. Students will be expected to purchase ARC textbooks, pocket face mask, and pay for all certification upon successful completion.

Prerequisites necessary before the beginning of the new school year:
1. Successful completion of Sophomore aquatics and recommendation of Health/Physical Education Department.
2. Swim 500 yds. using freestyle, sidestroke and breaststroke.
3. Tread water for 2 minutes without the use of his/her hands.
4. Descend 12 ft. to the bottom of the pool to retrieve a victim, carry the victim to the surface, and tow over to the side of the pool.
5. Purchase materials including reference books and pocket mask.

AQUATICS REPEAT
1st semester failure of sophomore aquatics must schedule: 7801
2nd semester failure of sophomore aquatics must schedule: 7802

LIFETIME FITNESS REPEAT
If this course is not remediated in summer school:
1st semester failure of junior P.E. must schedule: 7811
2nd semester failure of junior P.E. must schedule: [Seniors] 7812

Mathematics

Mathematics provides the basis for every field wherein measurement is required. As a discipline it causes students to think clearly, sequentially, and logically. Students should choose mathematics courses which will provide the background necessary to pursue desired career goals. The sequences are designed to meet varied needs. A student is able to move from one sequence to another or to schedule concurrent courses with departmental approval. Any math course in the curriculum is available to any student who qualifies and can benefit from it. Mathematics forms the basis for careers in engineering, science, computers, actuarial work, accounting, and research among many others.

The mathematics program is built around sequential courses. To avoid repetition of topics already mastered and to avoid duplication of credit, some restrictions are warranted. Course sequencing questions should be directed to individual student’s counselor or math teacher.

Students are expected to provide their own scientific calculator for all major math courses unless a graphing calculator is noted.
Major Electives

ALGEBRA/GEOMETRY 2 : 2722
Level 4.0 (IFE) (IEP required for enrollment) (6 periods – 1.0 credit)
IEP students will explore the behavior of quadratic and exponential functions. Additional topics will include investigating patterns, matrices, conditional probability and the study of polygons. Students will experience practical applications of the mathematics presented utilizing current technology.

ALGEBRA/GEOMETRY 3 : 2732
Level 4.0 (IFE) (IEP required for enrollment) (8 periods – 1.3 credit)
Level 4.0 (IFE) (IEP required for enrollment) (6 periods – 1 credit)
(Scientific calculator required)
This course will focus on the Pennsylvania Academic Standards for Mathematics and provide instruction to meet student needs in those areas. Real-world application of the mathematical concepts will be emphasized.

ALGEBRA/GEOMETRY 4 : 2744
Level 4.0 (IFE) (IEP required for enrollment) (Seniors) 2742
Level 4.0 (IFE) (IEP required for enrollment) (Seniors) 2744C
Level 4.0 (IFE) (Seniors) 2744
This course will focus on the Pennslyvania Academic Standards for Mathematics and provide instruction to meet student needs in those areas. Real-world application of the mathematical concepts will be emphasized.

ALGEBRA FOUNDATIONS : 2105B
Level 5.0 (IFE) [Sophomores] (6 periods – 1.3 credit)
This course is designed to develop basic algebraic concepts, principles, and manipulations. Major topics include functions, linear equations and inequalities, exponents, polynomials, factoring, graphing, quadratic equations, proportions, radicals and applications.

GEOMETRY : 2105BK
Level 5.0 (IFE) [Sophomores & Juniors] (6 periods – 1 credit)
This course is specifically designed for sophomores who have successfully completed Algebra Operations and Equations. This course develops basic algebraic concepts, principles, and manipulations. Students will take the Keystone Algebra Exam at the end of the course.

This course includes the study of plane and solid figures, similarity, congruence, postulates, theorems, proofs, constructions, areas and volumes. The concepts of space (solid) geometry are introduced early in the course and used thereafter. Finally, the student is introduced to elementary ideas of plane analytical geometry.

Prerequisite: Successful completion of Algebra 1

Prerequisite for 6.0:
Successful completion of Algebra 1 6.0 or “C” or higher in Algebra 1 Keystone.

Prerequisite for 5.0:
“B” or higher in Algebra 1 5.0

Prerequisite for 4.0:
“C” or higher in Algebra 1 4.0

Prerequisite for 3.0:
“B” or higher in Algebra 1 3.0

Prerequisite for 2.0:
“C” or higher in Algebra 1 2.0

Prerequisite for 1.0:
“B” or higher in Algebra 1 1.0

Students are enrolled in this course if they have not previously passed Algebra 1 or if they scored below basic on the Algebra 1 Keystone. The Keystone Exam will be readministered at the end of this course for non-proficient enrollees.

This course includes the study of plane and solid figures, similarity, congruence, postulates, theorems, proofs, constructions, areas and volumes. The concepts of space (solid) geometry are introduced early in the course and used thereafter. Finally, the student is introduced to elementary ideas of plane analytical geometry.

Prerequisite: Successful completion of Algebra 1

Prerequisite for 6.0:
“B” or higher in Algebra 1 6.0

Prerequisite for 5.0:
“C” or higher in Algebra 1 5.0

Prerequisite for 4.0:
“B” or higher in Algebra 1 4.0

Prerequisite for 3.0:
“C” or higher in Algebra 1 3.0

Prerequisite for 2.0:
“B” or higher in Algebra 1 2.0

Prerequisite for 1.0:
“C” or higher in Algebra 1 1.0

This course includes the study of plane and solid figures, similarity, congruence, postulates, theorems, proofs, constructions, areas and volumes. The concepts of space (solid) geometry are introduced early in the course and used thereafter. Finally, the student is introduced to elementary ideas of plane analytical geometry.

Prerequisite: Successful completion of Algebra 1

Prerequisite for 6.0:
“B” or higher in Algebra 1 6.0

Prerequisite for 5.0:
“C” or higher in Algebra 1 5.0

Prerequisite for 4.0:
“B” or higher in Algebra 1 4.0

Prerequisite for 3.0:
“C” or higher in Algebra 1 3.0

Prerequisite for 2.0:
“B” or higher in Algebra 1 2.0

Prerequisite for 1.0:
“C” or higher in Algebra 1 1.0

This course includes the study of plane and solid figures, similarity, congruence, postulates, theorems, proofs, constructions, areas and volumes. The concepts of space (solid) geometry are introduced early in the course and used thereafter. Finally, the student is introduced to elementary ideas of plane analytical geometry.

Prerequisite: Successful completion of Algebra 1

Prerequisite for 6.0:
“B” or higher in Algebra 1 6.0

Prerequisite for 5.0:
“C” or higher in Algebra 1 5.0

Prerequisite for 4.0:
“B” or higher in Algebra 1 4.0

Prerequisite for 3.0:
“C” or higher in Algebra 1 3.0

Prerequisite for 2.0:
“B” or higher in Algebra 1 2.0

Prerequisite for 1.0:
“C” or higher in Algebra 1 1.0

This course includes the study of plane and solid figures, similarity, congruence, postulates, theorems, proofs, constructions, areas and volumes. The concepts of space (solid) geometry are introduced early in the course and used thereafter. Finally, the student is introduced to elementary ideas of plane analytical geometry.

Prerequisite: Successful completion of Algebra 1
study of mathematics or science beyond high school. It includes a study of properties of real and complex numbers, conic sections, sequences and series, polynomial functions, functions, rational functions, transcendental functions, and trigonometry.  

**Prerequisites:** Successful completion of Geometry AND C or higher in Algebra 2 6.0 for enrollment in 2416 OR C+ or higher in Algebra 2 5.0 for enrollment in 2415.

**ALGEBRA 3 & TRIGONOMETRY ; [Juniors & Seniors] 2425A**  
**Level 5.0**  
(6 periods – 1 credit)  
This course is recommended for students who wish to continue their education beyond high school but are not planning to pursue a math or science related field. This course includes the study of families of functions and their behavior, graphs of functions, polynomial functions and trigonometry.

**Prerequisite:** Successful completion of Geometry AND either a “C” or higher in Algebra 2 5.0 or a “B+” or higher in Algebra 2E.

**TRIGONOMETRY/CALCULUS ; [Seniors] 2425B**  
**Level 5.0**  
(6 periods – 1.0 credit)  
This course is recommended for students who wish to continue their math education beyond high school but are not planning to pursue a math or science related field. This course includes conic sections, sequences and series, vectors, extensions of trigonometric and algebraic concepts, and an introduction to limits.

**Prerequisite:** Successful completion of Algebra 3/Trigonometry

**CALCULUS ; [Juniors & Seniors] 2526**  
**Level 6.0 (Honors)**  
(6 periods – 1 credit)  
(Graphing calculator required)  
This course includes the study of limits, differentiation and integration of algebraic and transcendental functions with applications and techniques of integration. Students who have a strong background in academic mathematics qualify for this course. Some precalculus topics such as trigonometric, logarithmic, and exponential properties are reviewed.

**Prerequisite:** A “C+” or higher in Pre-calculus 6.0

**AP CALCULUS [AB]; [Seniors] 2527**  
**Level 6.5**  
(7 periods – 1.15 credit)  
(Graphing calculator required)  
This course includes the study of limits, differentiation and integration of algebraic and transcendental functions with applications and techniques of integration. It is assumed that students who schedule this course have a complete mastery of precalculus mathematics. The course, therefore, is devoted completely to calculus topics. Students in this course are encouraged to take the College Board Advanced Placement Test in May.

**Prerequisite:** A “B+” or higher in Pre-calculus 6.0 or a “B” or higher in Calculus Honors

**AP CALCULUS 2 [BC]; [Seniors] 2627**  
**Level 6.5**  
(6 periods – 1 credit)  
(Graphing calculator required)  
Students who have successfully completed the first year of calculus may schedule Calculus 2. The course covers such topics as hyperbolic functions, vectors, parametric equations, infinite series, differential equations, polar coordinates, and plane analytical geometry. Students in this course are encouraged to take the College Board AP Test in May.

**Prerequisite:** Successful completion of AP Calculus [AB]
and other elementary concepts of discrete probability functions.  

**Prerequisite:** Successful completion of Algebra 2 at the 5.0 or 6.0 level  

**Note:** This course carries math credit only if the student has either successfully completed or is concurrently enrolled in Precalculus or Algebra 3/Trig. Students who have earned credit for AP statistics will not receive credit for this course.

**CALCULUS**  
**2835**  
(Second Semester)  
(6 periods – 0.5 credit)  
Level 5.0  
[Juniors & Seniors]  

Especially recommended for seniors with above average competence in mathematics. This course includes a study of tangents, limits, continuity, average and instantaneous rates of change, and differentiation of algebraic functions with applications.  

**Prerequisite:** Precalculus, or taking Precalculus concurrently for second semester enrollees

**Minor Electives**

**COMPUTER PROGRAMMING**  
**8210**  
(2 periods – 0.3 credit)  

This course is a study of the elementary concepts of computer programming. Students will learn proper JAVA format to write, execute, and edit programs. Variable types, functions, built-in library functions and input-output techniques will be addressed.  

**Co-requisite:** Algebra 2 or a higher level math course  

**Note:** This course will satisfy the Computer Programming prerequisite for AP Computer Science.

**S.A.T. PREPARATION**  
**8075**  
[Sophomores & Juniors]  
(2 periods – 0.3 credit)  

This course develops mathematics, verbal, and test taking skills which correspond to the revised Scholastic Aptitude Test (S.A.T.). The verbal portion of the course consists of rigorous vocabulary building and usage, analysis of reading passages, and skill building exercises. Mathematics preparation consists of geometric and algebraic problem solving and experiences with creating solutions to problems presented in open-ended format.  

**Math Prerequisite:** Successful completion of Algebra 1  

**NOTE:** This course is also available in the accelerated summer school program for a fee.

**ALGEBRA 1 PROJECT-BASED ASSESSMENT**  
**8822**  
[Sophomores]  
(2 periods per cycle per semester – 0.2 credit)  

Students who have not demonstrated proficiency on the Algebra 1 Keystone exam after the required attempts are mandated by PDE to participate in a project-based assessment as an alternative path to meet the Keystone graduation proficiency requirement.  

This course is structured as an online assessment from PDE for individual completion of a series of tasks and learning experiences which culminate in a final project in the area of Algebra 1. An external body of educators will evaluate the PBA to determine proficiency. The grading structure is as follows:  

**Progressing:** This grade will be assigned for those students who have demonstrated progress toward the completion of the PBA.  

**Mastered:** Once students have demonstrated proficiency as determined by PDE, the student grade changes from “Progressing” to “Mastered”.  

**Not Progressing:** This grade will be assigned for those students who have not worked toward the completion of the PBA.

**Music**

Students are provided the opportunity to apply their skills as aids to musical expression, to appreciate music through participation, and to learn the structures of musical forms. In order to audition for a select ensemble, students must be enrolled in the corresponding core ensemble. Rehearsals and performances inside and outside the regular school day are a requirement of membership.

**Major Electives**

**CONCERT BAND**  
**6234**  
Level 4.0  
(6 periods – 1 credit)  

Concert band emphasizes coordination of brass, woodwind, and percussion instruments into a large ensemble for public performance. In addition to the band class scheduled during the day, **students are expected to attend after school rehearsals and performances as part of their grade requirements.** Concert band members are eligible for participation in PMEA events.

**CHORUS**  
**6244**  
Level 4.0  
(6 periods – 1 credit)  

Chorus is for students who enjoy singing with a large group. Students are trained in the techniques of choral singing through exercises and the preparation of choral literature. In addition to the chorus rehearsals and performances scheduled during the regular school day, **chorus students are expected to attend several after-school rehearsals and performances as part of their grade requirements.** Only chorus members are eligible for Chamber Singers, Ambassadors, PMEA Events, and Concert Choir.

**ORCHESTRA MAJOR**  
**6254**  
Level 4.0  
(6 periods – 1 credit)  

Orchestra membership is open to all instrumental music students (string, wind, brass, and percussion players) who are interested in an enriching musical experience. Students are exposed to a wide variety of musical styles and orchestral techniques. In addition to playing in the full orchestra, students have the opportunity to participate in various ensembles. The orchestra performs at school concerts and community functions. **Orchestra students are expected to attend after school rehearsals and performances as part of their grade requirements.** Orchestra members are eligible for participation in PMEA events.

**WIND ENSEMBLE**  
**6265**  
Level 5.0  
(6 periods – 1 credit)  

An advanced level of instrumental repertoire is rehearsed and performed. In addition to the wind ensemble class scheduled during the day, **students are expected to attend after school rehearsals and performances as part of their grade requirements.** Wind ensemble members are eligible for participation in PMEA events.  

**NOTE:** Acceptance into this course is conditional upon the outcome of an audition with the band director prior to March 1 to be enrolled into this class.

**COMPREHENSIVE MUSIC TECHNOLOGY**  
**6335**  
Level 5.0  
[Juniors & Seniors]  
(6 periods – 1 credit)  

This class will combine concepts of Music Tech, Audio Engineering, analysis of contemporary popular styles and pop music history. It will provide intense learning and varied musical experiences with a high level of reinforcement. Students will analyze different musical styles, production and recording techniques, and recreate classic
recordings. They will learn elements of composition and arranging, and will perform and record original works written collaboratively and individually. Students will act as a musical ensemble, production company, and recording studio staff.

**Prerequisite:** Music Technology with a “B” or higher. Successful completion of Fundamentals of Music is recommended.

**Note:** Acceptance into this course is conditional upon the outcome of an audition with the music technology teacher prior to March 1.

**FUNDAMENTALS OF MUSIC**

**Level 4.0**

(6 periods – 1 credit)

In this non-performance course, students learn the fundamentals of reading and writing music. Rhythm, melody, and harmony are some of the areas covered. No previous musical experience is necessary.

**MUSIC THEORY**

**Level 5.0**

[Juniors & Seniors] (6 periods – 1 credit)

In this course it is assumed that the student has successfully completed Fundamentals of Music or its equivalent and is ready for a more intensive study of melodic, harmonic, and rhythmic skills in reading and writing. Students should speak with the instructor before registering for Theory.

**Prerequisite:** Fundamentals of Music

**AP MUSIC THEORY ✤**

**Level 6.5**

[Seniors] (6 periods – 1 credit)

This course expands upon the skills learned in Music Fundamentals and Music Theory. It combines class discussion/lectures with independent projects for the advanced music student. Work in special areas such as performance, composition, and research is supported with studies in advanced music theory and history. Students will develop musical skills that will lead to a thorough understanding of music composition and music theory. Students in this course are encouraged to take the College Board AP Test in May.

**Prerequisite:** Music Theory 5.0

**Minor Electives**

Students selecting Concert Band, Chorus, or Orchestra as a minor are encouraged to elect a double minor in these performance areas. A double minor meets four times each cycle and carries 0.7 credit.

**CONCERT BAND ✶**

(2 periods – 0.3 credit) 8621

(4 periods – 0.7 credit) 8641

See description of Concert Band – Course #6234, page 43.

**CHORUS ✶**

(2 periods – 0.3 credit) 8622

(4 periods – 0.7 credit) 8642

See description of Chorus – Course #6244, page 43.

**ORCHESTRA ✶**

(2 periods – 0.3 credit) 8623

(4 periods – 0.7 credit) 8643

See description of Orchestra Major – Course #6254, page 43.

**WIND ENSEMBLE**

(4 periods – 0.7 credit) 8644

See description of Wind Ensemble – Course #6265, page 45.

**CONTEMPORARY MUSIC**

(2 periods – 0.3 credit) 8630

Students listen to rock, pop and jazz music. They discuss the performance and arrive at conclusions as to the differences, similarities, strengths, and weaknesses of these and other styles. The curriculum includes current events in the music world including recordings, concerts, tours, groups, artists, lyrics, social, and economic effects.

**MUSIC TECHNOLOGY 1**

(2 periods – 0.3 credit) 8631

This course examines the operation and application of music synthesizers, computers and sound equipment. Although this course is not performance-based, students are expected to demonstrate competency in the operation of all equipment. Students will use MIDI sequencing to edit and create music.

**MUSIC TECHNOLOGY 2**

[Juniors & Seniors] (2 periods – 0.3 credit) 8632

Students who have successfully completed Music Technology 1 may continue their studies in Music Technology 2. The topics introduced in Music Technology 1 are continued in greater detail with particular emphasis on MIDI operations and computer applications. Performance and composition are integrated into the course.

**Prerequisite:** Music Technology 1 with a “B”

**AUDIO ENGINEERING**

(2 periods – 0.3 credit) 8633

In this course, students will begin to learn the skills used by today’s music producers and engineers in studios around the world. The class will cover music production, creating music with loops, recording, mixing, microphones and more. Students act as performers and/or engineers to record and mix projects using Logic Pro software in the Music Department’s Mac Lab.

**MUSIC CAREER**

(2 periods – 0.3 credit) 8634

The class will discuss the many career fields in music: history, theory, education and business practices within the music industry. The class focus is not only for students who will major in music in college, but also for students who wish to pursue music as a hobby or apply skills to non-scholastic performing groups.

**SOLO PERFORMERS**

(2 periods – 0.3 credit) 8638

This course requires skilled musicians to research, prepare and perform music for their peers. Students are given the opportunity to issue feedback to each other in order to improve their performances. In the fourth marking period, all students must present a twenty minute recital complete with a program which details any important information about the music.

**Note:** Acceptance into this course is dependent upon teacher screening of applicants.

**Reading**

The tiered reading intervention program of courses is designed to help students with informational and recreational reading. The program prepares students to fulfill reading requirements of their chosen profession or vocation. Each student’s level is assessed by both diagnostic evaluation and data to determine the nature and extent of any reading difficulty, as well as to identify strengths. The program is adjusted to students’ individual abilities and interests, using research-based methods and materials that best fit their learning style.

**Major Electives**

**FOUNDATIONS OF LITERACY**

4WL4A

**Level 4.0**

(6 periods – 1 credit)

A research-based, multi-sensory program designed to promote reading accuracy (decoding) and spelling (encoding) skills. The
program is designed to teach phonemic awareness, alphabetic principles (sound-symbol relationship), word study, spelling, sight word instruction, fluency, vocabulary, oral expressive language development, and comprehension.

LITERATURE EXPLORATIONS 4004
Level 4.0 (6 periods – 1 credit)
This course will provide instruction for students who continue to develop competency in literacy and critical analysis of text. Strategies and skills will be targeted through systematic instruction of comprehension, vocabulary, word study, analysis, and writing. A variety of complex texts will provide the opportunity for close reading, critical analysis, and constructed response. This course will be differentiated to meet the needs of all learners.

ENGLISH/STRATEGIC LITERACY 0180
Level 4.0 (12 periods – 2 credits)
This course will provide targeted, systematic instruction for comprehension strategies and skills for developing reading independence. Targeted literacy skills including comprehension, vocabulary, word study, and writing will be addressed through the use of technology, direct instruction and the use of both literature and informational text. A variety of challenging texts will provide the opportunity to apply these skills to critical analysis and response. The various modes of writing, along with the writing process, will also be taught. The program will be differentiated to meet the varied needs of learners.

Science

The science program is designed to emphasize the process of scientific inquiry so that students can think clearly, solve problems, participate in scientific discoveries, and interpret scientific data. These areas of emphasis are designed to fulfill three goals for students: (1) to prepare for further study and potential careers; (2) to instill such ongoing scientific curiosity that the student will continue to ask and answer scientific questions; (3) to develop an appreciation for the role of science and scientists in the world of expanding technology, inquiry and curiosity. These are stimulated through lecture and discussion, review of current scientific literature, and hands-on laboratory activities.

When considering scheduling chemistry or physics, it is recommended that students schedule the same chemistry or physics level as the math level they will be taking. That is, students planning to take 6.0 science should also schedule 6.0 math.

Any student planning a college major in the science, math or engineering field is recommended to take Chemistry 1 (5.0) or (6.0). Students are recommended to take 6.0 science and engineering courses with the intent of preparing for the College Board AP Exam. The subject matter attains a depth of understanding of fundamentals and competence in dealing with molecular and cellular biology, genetics and evolution, and organisms and populations with a suggested course outline provided by the College Board.

Prerequisite: A grade of an “A” in Biology 5.0 and Chemistry 1 5.0, or taking Chemistry 6.0 concurrently.

Required Course Offerings

BIOLOGY 4004  [Sophomores]  (6 periods – 1 credit)
Level 4.0 (IFE) (IEP required for enrollment)  3002
Level 4.0 (IFE) (IEP required for enrollment)  3004CK
Level 4.0 (IFE)  3004K
Level 5.0 (IFE) [Sophomores]  3005K

This course is aligned to the Pennsylvania Biology Keystone eligible content and covers concepts of biochemistry, cellular biology, genetics, evolution and ecology. The concepts are explored through discussion, laboratory experiments, activities, demonstrations, homework and videos. Group work and hands-on learning approaches are used to reinforce areas of inquiry.

BIOLOGY 3060K  [Sophomores]  (7 periods – 1.15 credit)
Level 6.0 (IFE) (Honors)  3006K

This course emphasizes cellular interactions, molecular biology, modern genetics, biochemistry, evolution and ecology as required by Pennsylvania state standards. Students are expected to be capable of higher level thinking skills including analysis and application.

NOTE: It is recommended that students are also enrolled in a 6.0 level English class.

Major Electives

ADVANCED BIOLOGY 3026  [Juniors & Seniors]  (7 periods – 1.15 credit)
Level 6.0 (Honors)  3026

This advanced course stresses those topics in biology which are applicable in medicine, nursing, physical education, and related fields dealing with life science. Basic biochemistry, human physiology and anatomy and the areas of nutrition and disease are included. Laboratory exercises and detailed dissections (including a cat) supplement lectures and outside readings.

Prerequisite: A grade of an “A” in Biology 5.0 and Chemistry 1 5.0, or taking Chemistry 6.0 concurrently.

AP BIOLOGY 3027  [Juniors & Seniors]  (8 periods – 1.3 credit)
Level 6.5  3027

This course is designed to be the equivalent of an introductory college biology course. The course provides advanced studies with the intent of preparing for the College Board AP Exam. The subject matter attains a depth of understanding of fundamentals and competence in dealing with molecular and cellular biology, genetics and evolution, and organisms and populations with a suggested course outline provided by the College Board.

There will be preparatory summer work for this course. Texts and assignments will be distributed in June of prior year.

Prerequisite: A grade of an “A” in 5.0 Biology or a “B” or higher in 6.0 Biology. Students who have not yet completed a year of chemistry must take it concurrently.

INTRODUCTION TO CHEMISTRY 3114  (7 periods – 1.15 credit)
Level 4.0 (IFE)  3114

This course offers a study of chemistry concepts that include the states and structure of matter, chemical reactions, and energy. These concepts are developed through discussion, experimentation, and problem solving. The fundamental mathematical applications of chemistry are explored and spiraled throughout the course.

Corequisite: Algebra 2E (2315E)
TOPICS IN CHEMISTRY

[Juniors & Seniors] (7 periods – 1.15 credit)
Level 4.0 (IFE) (IEP required for enrollment) 3714C
Level 4.0 (IFE) 3714

This course introduces students to fundamental principles in chemistry and shows how chemistry is applied in their lives and in society. In the laboratory, emphasis is placed on student learning of technologically-oriented skills and on group cooperative problem solving, especially in forensics applications.

CHEMISTRY 1 ; 3115
Level 5.0 (IFE) (7 periods – 1.15 credit)

This course offers a thorough study of chemistry concepts that include the states and structure of matter, chemical reactions, acids and bases, and thermodynamics. These concepts are developed through discussion, experimentation, and problem solving. Strong emphasis is placed on the mathematical application of chemistry concepts.

Corequisite: Algebra 2 (2315 or 2316) or higher

CHEMISTRY 1 ; 3116
Level 6.0 (IFE) (7 periods – 1.15 credit)

This course offers an in-depth study of chemistry concepts that include the states and structure of matter, chemical reactions, acids and bases, and thermodynamics. These concepts are developed through discussion, experimentation, and problem solving. Strong emphasis is placed on the integration of chemistry concepts through mathematical analysis.

Prerequisite: “B” or higher in 6.0 Algebra 2 or an “A” in 5.0 Algebra 2

CHEMISTRY 2 ; 3126
Level 6.0 (Honors) [Juniors & Seniors] (7 periods – 1.15 credit)

This course is designed to prepare students for a college freshman course in chemistry by devoting time to studying the aspects of chemistry in greater depth than in Chemistry 1. Also, areas such as thermodynamics, electrochemistry, quantum theory, methods of analysis, and mass action are covered. A college-level textbook is used to prepare students for further study in chemistry.

Prerequisite: Students must have earned a “B” or higher in Chemistry 1 and Algebra 2 (level 5.0)

Note: It is recommended that students have successfully completed or concurrently schedule a course in Physics.

AP CHEMISTRY ; 3127
Level 6.5 [Juniors & Seniors] (8 periods – 1.3 credit)

This course is designed to be the equivalent of the general chemistry course usually taken during the first post-secondary year. The course provides advanced studies with the intent of preparing for the College Board AP Exam. The subject matter attains a depth of understanding of fundamentals and competence in dealing with chemical problems in accordance with a suggested course outline provided by the College Board. It includes structure and states of matter, reactions, descriptive chemistry and chemical calculation.

Prerequisite: Students must have earned a “B” or higher in Chemistry 1 Honors (6.0) or an “A” in Chemistry 1 (5.0).

Note: It is recommended that students have successfully completed or concurrently schedule courses in Physics and Calculus.

PRINCIPLES OF TECHNOLOGY ; (6 periods – 1 credit)
Level 4.0 5234
Level 5.0 5235

See page 53 for course description.

PHYSICS ; 3225
Level 5.0 [Juniors & Seniors] (7 periods – 1.15 credit)

From a traditional approach, this college preparatory course focuses on introductory Physics concepts including kinematics, dynamics, energy, torque and other areas of Mechanics. Mathematical tools necessary to describe physical events are developed along with laboratory exercises that are designed to construct theories and models.

Prerequisite: Precalculus (5.0 or 6.0) must be taken concurrently or have been completed with a minimum grade of "C".

PHYSICS ; 3226
Level 6.0 (Honors) [Juniors & Seniors] (7 periods – 1.15 credit)

From a traditional approach, this college preparatory course focuses on introductory Physics concepts including kinematics, dynamics, energy, torque and other areas of Mechanics. Additional topics include vibrations and an introduction to electricity. A rigorous algebra and trigonometry approach is taken to prepare students for advanced laboratory exercises that are designed for students interested in a higher level of study in science.

Prerequisite: Precalculus (6.0) must be taken concurrently or have been completed with a minimum grade of “C.”

AP PHYSICS 1 3217
Level 6.5 (7 periods – 1.15 credit)

This algebra-based course provides a systematic introduction to the main principles of physics and emphasizes the development of conceptual understanding and problem solving ability using algebra and trigonometry. The AP Physics 1 course provides a foundation in physics for students in the life sciences, pre-medicine, and some applied sciences, as well as other fields not directly related to science. It is not intended to provide preparation for students interested in pursuing more advanced physics and engineering courses.

Prerequisite: Precalculus (6.0) must be taken concurrently or have been completed with a minimum grade of “C”.

AP PHYSICS C: MECHANICS 3237
Level 6.5 [Juniors & Seniors] (7 periods – 1.15 credit)

This calculus-based course is designed to be the equivalent to a general physics course taken during the first year of post-secondary education. The course focuses on introductory physics concepts including kinematics, dynamics, energy, torque and other areas of Mechanics. The course prepares students for the AP Mechanics Physics C exam and is presented from a calculus perspective.

Prerequisite: Student must have successfully completed or be concurrently enrolled in a calculus course.

AP PHYSICS C: ELECTRICITY AND MAGNETISM 3247
Level 6.5 [Seniors] (7 periods – 1.15 credit)

This calculus-based course is designed to be the equivalent to a general physics course taken during the first year of post-secondary education. The course focuses on introductory physics concepts including kinematics, dynamics, energy, torque and other areas of Mechanics. The course prepares students for the AP Electricity and Magnetism Physics C exam and is presented from a calculus perspective.

Prerequisite: AP Physics C: Mechanics must be completed with a minimum grade of “B”.

ASTRONOMY ; 3325
Level 5.0 (6 periods – 1 credit)
Level 6.0 (Honors) 3326

Astronomy is a course for students who are interested in space science and the structure of the universe. Topics of study to be
covered include the history of astronomy, motion of celestial objects, the earth-moon system, the physics of light, telescopes and space exploration, a survey of solar system, origin of the solar system, the sun and other stars, unusual situations like white dwarfs, neutron stars and black holes, galaxies, and the possibility of life in the universe other than here. In addition, students learn to identify stars, constellations, and other objects that can be viewed in the night sky. This course is open to eleventh and twelfth grade students only.

**Prerequisite:** Algebra 2 and Chemistry 5.0 must be completed or taken concurrently.

**GENETICS AND EMBRYOLOGY**

- **Level 5.0** (6 periods – 1 credit)

This course involves a detailed study of DNA chemistry, cellular reproduction, Mendelian genetics, human inheritance, genetic engineering, reproduction technology, and embryology. The inheritance of specific characteristics in fruit flies is studied through breeding experiments and human traits, through the construction of a family pedigree chart. This course is recommended for students interested in a medical or genetics career.

**Prerequisite:** Students must have earned an “A” or higher in Biology 5.0 or a “B” or higher in Biology 6.0.

**FORENSIC SCIENCE**

- **Level 5.0** (6 periods – 1 credit)

This course is designed to emphasize the application of biology and chemistry in a practical manner from the criminal justice world. The subject material will be covered in an intense approach. The topics that will be studied in detail are physical properties of glass, soil, sand; DNA and its application to fingerprinting; document analysis; osteology/odontontology; microscopic analysis; anthropology; careers in forensic science; complex reasoning; identifying prints such as of fingers, lips, teeth, shoe, and tires; toxicology; trace evidence; and serology. This course is designated for students to demonstrate an understanding of scientific analyses used on different types of evidence through various laboratory experiments, comparison techniques, and deductive reasoning and a detailed dissection of a fetal pig.

**Prerequisite:** Students must have earned a “B” or higher in 5.0 Chemistry and must have completed Algebra 2 (5.0) with a “B” or higher.

**FRONTIERS OF AVIATION**

- **Level 5.0** (6 periods – 1 credit)

The **Frontiers of Aviation** course is designated to introduce the student to the development and historical impact of powered flight. The course explores the early theories of aircraft design and construction to the myriad of aerospace applications used today and envisioned for the future. While particular emphasis is placed on the role and impact of military aviation development in terms of United States history, the course also examines the impact of general aviation on a global perspective.

Taught in a teamed approach embedded within this course is a Leadership and Intercommunication Skills section. Emphasis is placed on the importance of the communicative and management process including citizenship/patriotism, community service, time management, organizational structures and framework, effective oral and writing skills and team building all designed to develop and hone the student’s leadership skills. Students have a hands-on opportunity to apply their leadership and interpersonal skills through assigned leadership positions responsible for the management of the JROTC corps of cadets.

Students in this course have the opportunity to take advantage of a dual enrollment agreement with Adams State University. Students can choose to sign up for this dual enrollment agreement, pay a tuition fee of $60, which is a fraction of the normal credit cost at Adams State University, and earn 3 college credits upon successful completion of the course with a grade of “B” or higher. Students must be 16 years of age to enroll. Credit may be awarded retroactively for past AFJROTC classes upon turning 16. A maximum of 21 credits may be earned through completion of various AFJROTC courses.

**NOTE:** All students must wear the provided Air Force uniform and comply with grooming requirements. Students are expected to wear the Air Force uniform once per week on Wednesdays.

**THE SCIENCE OF FLIGHT & INTERCOMMUNICATION SKILLS**

- **Level 5.0** (6 periods – 1 credit)

The **Science of Flight** course introduces the student to the exciting world of aerospace science. The course spans diverse subject areas within the Principles of Flight discipline to include: Basic Aeronautics, Aircraft Motion & Control, Meteorology, Human Flight Physiology & Engineering and Aircraft Design. Flight simulators and aircraft model construction are an integral part of the interactive course curriculum.

The **Leadership and Intercommunication Skills** course is taught in a teamed approach within the Science of Flight curriculum. Emphasis is placed on the importance of the communicative and management process including citizenship/patriotism, community service, time management, organizational structures and framework, effective oral and writing skills and team building all designed to develop and hone the student’s leadership skills. Students have a hands-on opportunity to apply their leadership and interpersonal skills through assigned leadership positions responsible for the management of the JROTC corps of cadets.

Students in this course have the opportunity to take advantage of a dual enrollment agreement with Adams State University. Adams State University has approved our curriculum and verified that it meets the requirements of several different courses at Adams State University. Students can choose to sign up for this dual enrollment agreement, pay a tuition fee of $60, which is a fraction of the normal credit cost at Adams State University, and earn 3 college credits upon successful completion of the course with a grade of “B” or higher. Students must be 16 years of age to enroll. Credit may be awarded retroactively for past AFJROTC classes upon turning 16. A maximum of 21 credits may be earned through completion of various AFJROTC courses.

**NOTE:** All students must wear the provided Air Force uniform and comply with grooming requirements. Students are expected to wear the Air Force uniform once per week on Wednesdays.

**AEROSPACE SCIENCE: THE EXPLORATION OF SPACE**

- **Level 5.0** (6 periods – 1.0 credit)

This course introduces the student to the fundamental science, history & development and future vision of spaceflight. Combining elements of Astronomy, History and Physics the course explores topics critical to understanding the mechanics of rocketry, space travel, spacecraft construction and motion and mission control flight management. The course also explores the impact of space on a global perspective from technological advancements to international joint space operations and cooperation. Rocket model construction is an integral part of the interactive course curriculum.

Taught in a teamed approach embedded within this course is a Leadership and Intercommunication Skills section. Emphasis is placed on exploring management theories and practices to include effective planning and decision making, oral and writing skills,
team leading and interpersonal relations all designed to develop and hone the student’s leadership skills. Students have a hands-on opportunity to apply their leadership and interpersonal skills through assigned leadership positions responsible for the management of the JROTC corps of cadets.

Students in this course have the opportunity to take advantage of a dual enrollment agreement with Adams State University. Adams State University has approved our curriculum and verified that it meets the requirements of several different courses offered at Adams State University. Students who choose to sign up for this dual enrollment agreement, pay a tuition fee of $60, which is a fraction of the normal credit cost at Adams State University, and earn 3 college credits upon successful completion of the course with a grade of “B” or higher. Students must be 16 years of age to enroll. Credit may be awarded retroactively for past AFJROTC classes upon turning 16. A maximum of 21 credits may be earned through completion of various AFJROTC courses.

**NOTE:** All students must wear the provided Air Force uniform and comply with grooming requirements. Students are expected to wear the Air Force uniform once per week on Wednesdays.

### Semester Electives

The following semester courses may be offered during either the first semester, second semester, or both.

**SELECTED TOPICS IN BIOLOGY**

**Level 4.0** [Juniors & Seniors] (6 periods – 0.5 credits)

This supplemental instruction course is intended for students who need to retake the Biology Keystone Exam. It will review and reinforce the major concepts of the Biology I curriculum and will emphasize Keystone exam preparation.

**BOTANY**

[Juniors & Seniors] (6 periods – 0.5 credit)

**Level 4.0**

**Level 5.0**

This course stresses the practical aspects of botany such as greenhouse culture and gardening (both ornamental and food). During the winter months there is a review of the entire plant kingdom. Field experiences are a vital part of the course.

**Prerequisite:** Successful completion of Biology

**MARINE SCIENCE**

[Juniors & Seniors] (6 periods – 0.5 credit)

**Level 4.0**

**Level 5.0**

Marine Science is devoted to concepts in biology, ecology and oceanography. The course stresses the interrelationships between plants and animals of the marine environment, as well as oceanography, tides, wave action, and other topics which affect the environment of the marine inhabitants.

**Prerequisite:** Successful completion of Biology

**GENETICS**

[Juniors & Seniors] (6 periods – 0.5 credit)

**Level 5.0**

This course involves a study of DNA structure, protein synthesis, mitosis and meiosis, Mendelian genetics, types of mutations, human inheritance, genetic engineering, and prenatal diagnosis. A pedigree chart of human family traits will also be constructed. Textbook and required readings are at this level.

**Prerequisite:** Students must have earned a “B” or higher in Biology 5.0 and have successfully completed or are concurrently enrolled in Chemistry 5.0

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### Minor Electives

**BIOLOGY PROJECT-BASED ASSESSMENT**

(2 periods per cycle per semester – 0.2 credits)

Students who have not demonstrated proficiency on the Biology Keystone exam after the required attempts are mandated by PDE to participate in a project-based assessment as an alternate path to meet the Keystone graduation proficiency requirement.

This course is structured as an online assessment from PDE for individual completion of a series of tasks and learning experiences which culminate in a final project in the area of Biology. An external body of educators will evaluate the PBA to determine proficiency. The grading structure is as follows:

- **Progressing:** This grade will be assigned for those students who have demonstrated progress toward the completion of the PBA.
- **Mastered:** Once students have demonstrated proficiency as determined by PDE, the student grade changes from “Progressing” to “Mastered”.
- **Not Progressing:** This grade will be assigned for those students who have not worked toward the completion of the PBA.

### Social Studies

Social Studies is the study of people in their social environment. Its goal is to make students aware of the social influences in the world that have created today’s society and have influence on their behavior. What students learn in the social studies curriculum will make them knowledgeable and capable citizens of the United States and the world.

The social studies department believes that the research process, defined as the locating, gathering, organizing, analyzing, and presenting of data/information, is an important part of the learning process. The department believes that all students must have the opportunity to learn the research process. Therefore, research and writing are an integral part of the social studies curriculum.

Students must earn a minimum of four (4) credits in grades 9-12, but they are encouraged to take additional social studies credits to expand their knowledge of people and the social
environment in which they live.

Students and parents should note that the Social Studies Department offers several Advanced Placement (AP) courses as part of the College Board’s Advance Placement Program. AP is a program of college-level courses and exams that gives high school students the opportunity to receive advanced placement and/or credit in college. While each college decides which AP Examination grades it will accept for college credit, it is possible for successful AP high school students to enter college with credit for courses already, which can mean a savings in cost and time for the student and their family.

**Required Course Offerings**

**AMERICA IN HISTORY 3** *(6 periods – 1 credit)*

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
<th>Code</th>
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<tbody>
<tr>
<td>Level 4.0 (IFE) (IEP required for enrollment)</td>
<td>1002</td>
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<td>Level 4.0 (IFE) (IEP required for enrollment)</td>
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<tr>
<td>Level 4.0 (IFE) [Sophomores]</td>
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<tr>
<td>Level 5.0 (IFE) [Sophomores]</td>
<td>1005</td>
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<tr>
<td>Level 6.0 (IFE) (Honors) [Sophomores]</td>
<td>1006</td>
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This required 10th grade course integrates PA Standards into a study of America’s history and culture since 1945. This course, the third installment of a three part series in American history, provides opportunities for students to study the Cold War, McCarthyism and Korea, the Vietnam War and the cultural changes of the 1960s, the Great Society, Watergate, the Reagan era, the 1990s, and America at home and abroad in the era of 9/11. Current issues of the American political and societal arenas are incorporated into the course. Students will also continue to develop their geography skills, to study primary and secondary source documents, and to investigate the ways culture and events in history have shaped the country and the world in which we live.

Students in both the 4.0 and 5.0 levels engage in writing and research skills addressed in the PA Core Standards. The level 5.0 is a more rigorous course that requires a research paper to build 21st century skills such as critical reading, using and evaluating sources, synthesizing information, and developing arguments.

In the 6.0 level course, an advanced course, students read, write, and research at an accelerated level that requires students to engage in 21st century skills such as critical reading, using and evaluating sources, synthesizing information, and developing arguments.

Level 4.0 course, students are expected to complete a summer reading assignment of a non-fiction text prior to the start of school in September. Students are tested on the summer assignment in the first week of school. It is recommended that students in the 6.0 course are also scheduled for English 6.0. Students may also take the AP US History course in place of this offering.

**WORLD HISTORY** *(6 periods – 1 credit)*

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<thead>
<tr>
<th>Level</th>
<th>Description</th>
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<tbody>
<tr>
<td>Level 4.0 (IFE) (IEP required for enrollment)</td>
<td>1112</td>
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<tr>
<td>Level 4.0 (IFE) (IEP required for enrollment)</td>
<td>1114</td>
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<tr>
<td>Level 4.0 (IFE) [Juniors]</td>
<td>1114</td>
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<td>Level 5.0 (IFE) [Juniors]</td>
<td>1115</td>
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<tr>
<td>Level 6.0 (IFE) [Juniors]</td>
<td>1116</td>
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This year-long required 11th grade course integrates PA standards into a study of history and culture around the world. The course will provide opportunities for students to study how major developments such as the discovery of the Americas, Industrial Revolution, and imperialism have shaped the Middle East, Africa, India, China, Latin America, and Europe. Students will also have the opportunity to continue to develop their geography skills, to study primary and secondary source documents, as well as to investigate how culture and events in history have shaped the country and world in which we live.

Students in both the 4.0 and 5.0 levels engage in writing and research skills addressed in the PA Core Standards. The level 5.0 is a more rigorous academic course that requires a research paper to build 21st century skills such as critical reading, using and evaluating sources, synthesizing information, and developing arguments.

In the 6.0 level course, an advanced course, students read, write, and research at an accelerated level that requires students to engage in 21st century skills such as critical reading, using and evaluating sources, synthesizing information, and developing arguments. For the 6.0 course, students are expected to complete a summer reading assignment of a non-fiction text prior to the start of school in September. Students are tested on the summer assignment in the first week of school. Also, it is recommended that students in the 6.0 course are also schedule for English 6.0. Students may also take the AP World History course or AP European History course in place of this offering.

**AMERICAN GOVERNMENT: STATE AND LOCAL** *(Seniors)* *(6 periods – 0.5 credit)*

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<tr>
<th>Level</th>
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<tr>
<td>Level 6.0 (IFE)</td>
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With the exception of seniors taking the full-year AP Government course, all seniors are required to complete one semester of American Government from the course offerings listed below, and one semester course listed under the semester options. After a review of the elements of the national government and the role of political parties, this required semester course for seniors places specific emphasis on the various forms of state and local government. Citizenship, voting, and the role of interest groups and media are included as topics of study. Through classroom study and opportunities for research, field trips, guest speakers, and attendance at local government meetings, seniors will gain a greater understanding of the services provided by state and local governments to citizens, and more importantly, their responsibilities as citizens to participate in all levels of government.

Seniors may take the AP U.S. Government course (see “Major Electives”) in place of this offering.

**Major Electives**

**AP US HISTORY** *(6 periods – 1 credit)*

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<th>Level</th>
<th>Description</th>
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<tbody>
<tr>
<td>Level 6.5 (IFE) [Sophomores]</td>
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This year-long elective Advanced Placement course provides high achieving students with a learning experience equivalent to a college-level introductory course in United States history from approximately 1450 to the present. Success on the Advanced Placement Test and the development of inquiry skills are major goals for students in this course. Students taking this college level course will qualify to take the AP Exam in U.S. History for a fee. While each college and university decides which AP Examination grades it will accept for college credit, it is possible for successful AP high school students to enter college with course credits.

Following the Advanced Placement syllabus of the College Board, the students are given a chronological and thematic approach to the study of the American Revolution, the Jacksonian period, the Civil War and Reconstruction, Populism and Progressivism, the New Deal, and international and domestic changes in the post 1945 period. Primary sources, maps, statistical tables and graphic evidence of historical events are used.

In addition to the regular classroom work, students are expected to do a great deal of reading in a college-level textbook and studying on their own. Students are expected to complete a summer
COURSE DESCRIPTIONS (GRADES 10-12)

College credit, it is possible for successful AP high school students to enter college with course credits.

AP COMPARATIVE GOVERNMENT  
Level 6.5 (IFE)  
[Seniors]  
(6 periods – 1 credit)

This year-long elective Advanced Placement course provides high achieving students with a learning experience equivalent to a college course in Comparative Government and Politics. The AP Comparative Government course is intended to provide students with an opportunity to critically examine different political and governmental realities in various regions of the world. In the twenty-first century, globalization has become a central theme in our daily lives as we are impacted by events far removed from our neighborhood, state, and nation. It is vital for students to develop an understanding of the diverse political structures and practices at work in the world today. With this in mind, the course focuses on six core countries and the realms in which they operate: Great Britain, Russia, China, Iran, Mexico and Nigeria. As each country is examined, we analyze and evaluate the topical areas of methodology, power, institutional structures, civil society, political and economic change and public policy. Students taking this course will qualify to take the AP Exam in Comparative Government and Politics. While each college and university decides which AP Examination grades it will accept for college credit, it is possible for successful AP high school students to enter college with course credits. A college-level textbook is used.

Success on the Advanced Placement Test and the development of inquiry skills are major goals for students in this course. In addition to the regular classroom work, students are expected to do a great deal of reading in a college-level textbook and studying on their own. Students are expected to complete a summer requirement—reading an assigned nonfiction selection. This assignment must be completed before the start of school year. Students will be tested on the required assignment during the first week of school.

AP WORLD HISTORY  
Level 6.5 (IFE)  
[Seniors]  
(6 periods – 1 credit)

This year-long elective Advanced Placement course provides high achieving students with a learning experience equivalent to a college-level introductory course in world history, with balanced global coverage in Africa, the Americas, Asia, and Europe from approximately 8000 BCE to the present. Success on the Advanced Placement Test and the development of inquiry skills are major goals for students in this course. Students taking this college level course will qualify to take the AP Exam in World History for a fee. While each college and university decides which AP Examination grades it will accept for college credit, it is possible for successful AP high school students to enter college with course credits.

Following the Advanced Placement syllabus of the College Board, the students are given a chronological and thematic approach to the dynamics of continuity and change; effects of interaction; systems of social structure; developments of culture; evolution of political systems; and effects of demographics, technology, and economics.

In addition to the regular classroom work, students are expected to do a great deal of reading in a college-level textbook and studying on their own. Students are expected to complete a summer requirement—reading an assigned nonfiction selection. This assignment must be completed before the start of school in September. Students will be tested on the required assignment during the first week of school.

Juniors may take the AP World History course in place of the required World History course (see “Required Course Offerings”).

AP US GOVERNMENT  
Level 6.5 (IFE)  
[Seniors]  
(6 periods – 1 credit)

This year-long elective Advanced Placement course provides high achieving students with a learning experience equivalent to a college course in United States Government and Politics. The course is intended to provide students with an opportunity to critically examine different political and governmental realities in various regions of the world. In the twenty-first century, globalization has become a central theme in our daily lives as we are impacted by events far removed from our neighborhood, state, and nation. It is vital for students to develop an understanding of the diverse political structures and practices at work in the world today. With this in mind, the course focuses on six core countries and the realms in which they operate: Great Britain, Russia, China, Iran, Mexico and Nigeria. As each country is examined, we analyze and evaluate the topical areas of methodology, power, institutional structures, civil society, political and economic change and public policy. Students taking this course will qualify to take the AP Exam in Comparative Government and Politics. While each college and university decides which AP Examination grades it will accept for college credit, it is possible for successful AP high school students to enter college with course credits. A college-level textbook is used.

Success on the Advanced Placement Test and the development of inquiry skills are major goals for students in this course. In addition to the regular classroom work, students are expected to do a great deal of reading in a college-level textbook and studying on their own. Students are expected to complete a summer requirement—reading an assigned nonfiction selection. This assignment must be completed before the start of school year. Students will be tested on the required assignment during the first week of school.

AP PSYCHOLOGY  
Level 6.5  
(6 periods – 1 credit)

This year-long elective Advanced Placement course provides high achieving students with a learning experience equivalent to a college level introductory psychology course. Success on the Advanced Placement Test and the development of inquiry skills are major goals for students in this course. Students taking this college level course will qualify to take the AP Exam in Psychology for a fee. While each college and university decides which AP Examination grades it will accept for college credit, it is possible for successful AP high school students to enter college with course credits.

Major areas of instruction include methods, approaches and history of psychology; the biological basis of behavior; sensation and perception; learning and cognition; motivation and emotion; developmental psychology; personality; tests and individual differences; abnormal psychology; the treatment of psychological disorders; and social psychology. Success on the Advanced Placement Test and the development of inquiry skills are major goals for students in this course.

In addition to the regular classroom work, students are expected to do a great deal of reading in a college-level textbook and studying on their own. Students are expected to complete a summer requirement—reading an assigned nonfiction selection. This assignment must be completed before the start of school year. Students will be tested on the required assignment during the first week of school.

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requirement—reading an assigned nonfiction selection. This assignment must be completed before the start of school in September. Students will be tested on the required assignment during the first week of school.

**AP EUROPEAN HISTORY (1350-PRESENT)** 1527
Level 6.5 [Juniors & Seniors] (6 periods – 1 credit)

This year-long elective Advanced Placement course provides high achieving students with a learning experience equivalent to a college-level course in European history. Success on the Advanced Placement Test and the development of inquiry skills are major goals for students in this course. Students taking this college level course will qualify to take the AP Exam in European History for a fee. While each college and university decides which AP Examination grades it will accept for college credit, it is possible for successful AP high school students to enter college with course credits.

The course consists of a chronological study of European and world conditions from 1350 to the present. From the impact of the Black Death to the creation of the European Union and the Euro, political and social developments throughout Europe will be addressed as well as the study of art and architecture in their specific time periods. The impact of Louis XIV, Napoleon, Luther and Bismarck are among the many interesting historical figures analyzed in this course. The writings of Machiavelli, John Locke, Adam Smith and Karl Marx are studied as original sources to provide background about contributing and conflicting ideologies which have shaped Western civilization.

In addition to the regular classroom work, students are expected to do a great deal of reading in a college-level textbook and studying on their own. Students are expected to complete a summer requirement—reading an assigned nonfiction selection. This assignment must be completed before the start of school in September. Students will be tested on the required assignment during the first week of school.

Juniors may take AP European History in place of the required World History course (see "Required Course Offerings").

**AP MACRO/MICRO ECONOMICS** 1627
Level 6.5 [Juniors & Seniors] (6 periods – 1 credit)

This year-long, college-level Advanced Placement elective course provides high achieving students with a learning experience equivalent to a college-level course in Macroeconomics and a college-level course in Microeconomics. Students taking this college level course will qualify to take the AP Exam in Macroeconomics and/or the AP Exam in Microeconomics. A separate grade is reported for each test. While each college and university decides which AP Examination grades it will accept for college credit, it is possible for successful AP high school students to enter college with course credits. A college-level textbook is used. Success on the Advanced Placement Test and the development of inquiry skills are major goals for students in this course.

Macroeconomics studies the principles of economics that apply to an economic system as a whole. It places particular emphasis on the study of national income and price determination, and also develops students’ familiarity with economic performance measures, economic growth, and international economics.

Microeconomics studies the principles of economics that apply to the functions of individual decision makers, both consumers and producers, within the larger economic system. It places primary emphasis on the nature and functions of product markets, and includes the study of factor markets and the role of government in promoting greater efficiency and equity in the economy.

In addition to the regular classroom work, students are expected to do a great deal of reading in a college-level textbook and studying on their own. Students are expected to complete a summer requirement—reading an assigned nonfiction selection. This assignment must be completed before the start of school in September. Students will be tested on the required assignment during the first week of school.

**GLOBAL STUDIES** 1935
Level 5.0

The Global Studies course as part of the JROTC curriculum introduces the student to the world’s culture through the study of world affairs, regional studies, religions, political systems, economics, geography, technological advancements and environmental concerns. It looks at the major events and significant figures that have shaped each region. The underlying course theme emphasizes the impact that cultural perspectives have on interactions between people.

Taught in a teamed approach, embedded within this course is a Leadership and Intercommunication Skills section. Emphasis is placed on the importance of the communication and management process including development of leadership styles, goal-setting, effective listening, oral and written skills development, team building and interpersonal relations – all designed to develop and hone the student’s leadership abilities. Students have a hands-on opportunity to apply their leadership and interpersonal skills through assigned leadership positions that are responsible for the management of the overall JROTC corps of cadets.

Students in this course have the opportunity to take advantage of a dual enrollment agreement with Adams State University. Adams State University has approved our curriculum and verified that it meets the requirements of their Cultural Understanding of Leadership Development through Global Studies course (LEAD 132). Students can choose to sign up for this dual enrollment agreement, pay a tuition fee of $60, which is a fraction of the normal credit cost at Adams State University, and earn 3 college credits upon successful completion of the course with a grade of “B” or higher. Students must be 16 years of age to enroll. Credit may be awarded retroactively for past AFJROTC classes upon turning 16. A maximum of 21 credits may be earned through completion of various AFJROTC courses.

**Semester Course Offerings**

With the exception of seniors taking the full-year AP Government course, all seniors are required to complete one semester from the course offerings listed below, in addition to one semester of American Government. Juniors are encouraged to enroll in these electives in addition to the required American Cultures course.

**PSYCHOLOGY**
Level 4.0 1834
Level 5.0 1835
Level 6.0 1836

This semester elective course introduces students to the systematic and scientific study of human behavior. Major areas of study include the theories, principles and history of psychology; the brain and nervous system; sensation and perception; learning; psychological disorder; and social psychology. Students also study the methods psychologists use in their science and practice.
Technology and Engineering Education

The Technology and Engineering Education department offers a curriculum which provides opportunities for all students to gain essential 21st century Science, Technology, Engineering and Mathematics (STEM) skills. Technology and Engineering Education courses offer a multitude of opportunities to experience the application of knowledge and skills through collaborative design activities, problem solving, experimentation, critical thinking, cutting-edge industry standard software and much more.

For students considering a focused introduction to engineering, the Technology and Engineering Education department offers an Engineering Academy. The Engineering Academy is designed to prepare students for a post high school education in engineering or engineering technology. Please see the Engineering Academy course sequence outlined in the next section of the Program of Studies booklet or visit www.northpennengineering.org for further information.

Major Electives

MANUFACTURING AND CONSTRUCTION 5134
Level 4.0 (6 periods – 1 credit)

The Manufacturing and Construction course is designed to use wood, wood substitutes, metals, and plastics in the manufacturing and construction of today’s products. Student activities include an overview of the woodworking and metalworking industries, safe use of hand tools and machines, technical research product planning, problem solving, and experimentation in the manufacturing laboratory. Students participate in individual and group problems and activities.

ADVANCED MANUFACTURING AND CONSTRUCTION 5144
Level 4.0 [Juniors & Seniors] (6 periods – 1 credit)

Advanced Manufacturing and Construction challenges students to identify, research solution, and develop individual products with instructor approval. Group manufacturing and construction activities are used to teach the industrial process from concept through marketing and distribution with emphasis on efficiency, accuracy, and cooperative working. Students are encouraged to combine materials (wood, metal, plastics) in the design and production of products.

Prerequisite: Manufacturing and Construction

Note: With the approval of the instructor, and submission of the independent study proposal to the building principal by May 1st, students may request a third year of Advanced Manufacturing and Construction.

PRINCIPLES OF TECHNOLOGY 5234
Level 4.0 (6 periods – 1 credit)

In this introductory course, students explore the physical principles underlying modern technology. Demonstrations, discussions, large and small group activities, and “hands-on” activities are based on the principles of force, work, rate, and resistance as they apply to mechanical, fluid, electrical and thermal systems. Technical content area reading skills are taught in conjunction with the high school reading specialist. This course is designed for students interested in a technical career, and meets the requirement for science credit.

Prerequisite: Algebra 1
Engineering Academy

The Engineering Academy represents a course sequence that addresses the educational needs of students planning on a post high school educational program in a two or four year college leading to a career in engineering or engineering technology. The courses offered in the Engineering Academy are part of pre-engineering program called Project Lead the Way. Project Lead the Way is a nationwide program that has aligned the participating schools with major universities across the country to provide a greater advantage to those students who feel they may be interested in pursuing a career in the engineering/architecture/design-related fields. The courses are designed to expose the student to the vast world of engineering through various experiential learning scenarios. Colleges that offer engineering as a major look favorably upon students that have taken the PLTW coursework as a part of the admission cycle. The Engineering Academy is for any 5.0 or 6.0 level student who is contemplating a career in Engineering. Students who wish to enroll in The Engineering Academy must complete the application available from guidance counselors or from the Engineering Academy website at: www.northpennengineering.org.

AP COMPUTER SCIENCE PRINCIPLES 2907
Level 6.5 (6 periods – 1 credit)
PLTW Computer Science empowers students to become creators, instead of merely consumers, of the technology all around them. The program engages students in collaborative projects that help them develop in demand computer science knowledge as well as transportable skills like creative thinking and communication. And whether they’re creating an online art gallery or using automation to process and analyze DNA sequence data, PLTW Computer Science students are seeing how their learning connects to the real world.
Prerequisite: Successful completion of Geometry AND either completed Algebra 2 5.0 with a B or better OR concurrently enrolled in a level 6.0 / 6.5 math course
Note: This course does not fulfill the math credit requirements for graduation.

INTRODUCTION TO ENGINEERING DESIGN (IED) 5456
Level 6.0 (6 periods – 1 credit)
Introduction to Engineering Design is an introductory course that develops students’ problem-solving and critical-thinking skills and emphasizes the concepts of developing three-dimensional models and solid renderings of an object. Students focus on the application of visualization processes and tools provided by current, state-of-the-art computer hardware and software programs. IED emphasizes the design-development process of a product and how a product model is produced, analyzed, and evaluated, using a Computer-Aided Design System. Various design applications and possible career opportunities are explored and discussed in detail.
Note: This course is a requirement for Grade 10 students in The Engineering Academy.

PRINCIPLES OF ENGINEERING (POE) 5466
Level 6.0 (6 periods – 1 credit)
Principles of Engineering is a broad-based survey course designed to help students understand the field of engineering and engineering technology and its unlimited and diverse career opportunities. Students continue the development of problem-solving and critical-thinking skills required in their post-secondary pursuits and engineering careers. In exploring various and numerous engineering systems and manufacturing processes, the students also learn how engineers address concerns about the social and political consequences of technological changes. Through theory, guest speakers, field trips, and hands-on problem-solving activities, students experience firsthand what engineering is all about and are able to answer this question: “Is a career in engineering or engineering technology for me?”
Prerequisite: This course is highly suggested for grade 10 students or any first year student entering the Engineering Academy. This course can be taken simultaneously with Intro to Engineering Design or Digital Electronics.

DIGITAL ELECTRONICS 5476
Level 6.0 (6 periods – 1 credit)
Digital Electronics is a course of study in applied digital logic and is patterned after first semester digital electronics courses taught in two and four year post secondary schools typically found in watches, calculators, video games, and computers, and they utilize Boolean logic in the solution of problems. Smart circuits are present in virtually all parts of our lives, and their use is rapidly increasing, making DE a critical course of study for any student pursuing a career in engineering/engineering technology. Using the latest software systems available to industry, students also test and analyze simple and complex digital circuits. Students design circuits; export their designs to a printed circuit autorouting program that generates printed circuit boards; and construct designs, using chips and other DE components. Course is for Grade 11 Engineering Academy students.
Prerequisite: This course is for grade 11 Engineering Academy students or those students who have successfully taken Intro to Engineering Design and Principles of Engineering courses. This course can be taken simultaneously with Principles of Engineering or Computer Integrated Manufacturing. Students who have completed Advanced Electronics may take this course.

COMPUTER INTEGRATED MANUFACTURING (CIM) 5486
Level 6.0 [Juniors & Seniors] (6 periods – 1 credit)
The Computer-Integrated Manufacturing course builds upon the solid-modeling and three-dimensional skills students developed in Introduction to Engineering Design. Students solve design problems, using state-of-the-art Computer-Assisted Design software programs. They evaluate their solutions, using mass-property analysis (relationship study of the design, function, and materials); determine appropriate modifications; and use prototyping equipment in producing a three-dimensional model of the solution. Students present the progress and results of their work through oral and portfolio-quality written communications. Course is for Grade 11 and 12 Engineering Academy students.
Prerequisite: Successful completion of courses associated with The Engineering Academy including Introduction to Engineering and Design and Principles of Engineering. This course can be taken simultaneously with Digital Electronics or Engineering Design and Development.
PRINCIPLES OF TECHNOLOGY 5235
Level 5.0 (6 periods – 1 credit)
In this academically challenging course, students explore the physical principles underlying modern technology. Demonstrations, discussions, large and small group activities and “hands-on” activities are based on the principles of force, work, rate, and resistance as they apply to mechanical, fluid, electrical and thermal systems. This course meets the requirement for science credit and prepares students for pursuing post-secondary degrees in an engineering/technical field.
Prerequisite: Algebra 1

MECHANICAL DRAWING: ARCHITECTURE/MACHINE/ELECTRONICS 5334
Level 4.0 (6 periods – 1 credit)
Mechanical Drawing is a course designed to teach how to communicate ideas through engineering graphics/technical drawings. Students will study architecture and mechanical (machine) drawing styles. Students develop engineering and architectural skills by using current industry used software applications as they complete a series of activities. The course is divided into architecture-based and mechanical-based project based learning activities. Students will use variety software to explore the 2D and 3D realms while developing an understanding for standardized drawing communication. Mechanical Drawing is highly recommended to all students considering careers in engineering, architecture or design related fields.
**There are no course pre-requisites for this course.

ADVANCED MECHANICAL DRAWING 5344
Level 4.0 [Juniors & Seniors] (6 periods – 1 credit)
Advanced Mechanical Drawing Students continue to develop skills and background within several areas from the previous year. Areas of study include Mechanical (machine) and Architectural drawing. All students use Computer-Aided-Drafting (CAD) software to develop a series of drawings in all areas. The various software packages will allow the student to develop 3-D images with full color rendering and modeling capabilities. Students work on both independent and team projects along with the required drawing assignments.
Prerequisite: Mechanical Drawing or Introduction to Engineering Design
Note: With the approval of the instructor, and submission of the independent study proposal to the building principal by May 1st, students may request a third year of Advanced Mechanical Drawing. Such students develop an independent study program with the help of the instructor.

ELECTRICITY/ELECTRONICS 5434
Level 4.0 (6 periods – 1 credit)
This course is designed to explore the fundamentals of electricity and electronics and its effects on a technologically changing world. Student centered activities include basic principles of electricity, direct current, solid state devices, alternating current, residential wiring, home/mobile audio and video systems, and career opportunities in the electricity and electronics field. Classroom theory is reinforced through comprehensive laboratory exercises which include designing, and testing a wide variety of circuits. Experimentation, circuit design and construction, and troubleshooting skills are enhanced through the use of industry leading circuit simulation and experimentation software. This course is designed for students interested in technical, industrial, engineering, or military careers in electronics or for those interested in the computer sciences field.

ADVANCED ELECTRONICS 5445
Level 5.0 [Juniors & Seniors] (6 periods – 1 credit)
The Advanced Electronics course is designed for students to further expand their knowledge of electricity and electronics. An in-depth study of power supply design and construction from the component level is utilized to reinforce DC and AC theories and applications. The use of analog and digital meters, oscilloscopes, and power supplies in conjunction with Integrated circuits (chips), audio and video circuits, digital theory, and computer applications help to reinforce the knowledge and skills acquired. Experimentation, circuit design and construction, and troubleshooting skills are enhanced through the use of industry leading circuit simulation and design software.
Prerequisite: Electricity/Electronics or Digital Electronics
Note: With the approval of the instructor, and submission of the independent study proposal to the building principal by May 1st, students may request a third year independent study program or with a final grade of a “B” or better, students may elect to take the Digital Electronics course.

Minor Electives

COMMUNICATIONS SYSTEM 8500
The Communications System minor is designed to explore the basic methods used to produce, use and exchange information. Students use the computer to create a product by screen printing and lithography. Students explore electronic communications through an audio/video module, video editing module, digital photography along with other forms of communication and the industries that support them.
MANUFACTURING AND CONSTRUCTION MATERIALS MINOR  
(2 periods – 0.3 credit)  
The Manufacturing and Construction Minor provides the opportunity to explore woodworking and metalworking as students design, develop, and construct projects in selected areas of interest. Students use handtools, portable power tools, and machinery as they complete individual/group activities in the Manufacturing Laboratory.

POWER TECHNOLOGY MINOR  
(2 periods – 0.3 credit)  
The Power Technology Minor consists of a survey of energy, power, and transportation. Human muscle, simple and compound machines, gears, levers, pneumatics and hydraulics, internal combustion engines, automotive, aviation, and rocketry are explained. Future modes of energy, power, and transportation, such as: alternative energy sources and power systems, magnetic levitation, solar vehicles, and tidal energy stations are studied. Student activities include laboratory activities and hands-on experiences.

MECHANICAL DRAWING MINOR  
(2 periods – 0.3 credit)  
Mechanical Drawing Minor is an introductory course enabling students to explore and develop technical drawing skills. Students complete a variety of drawings as they learn to use the instruments of a draftsman. Emphasis is placed on basic drawing skills, simple machine drawings, and architectural floor plans.

World Languages

All students are encouraged to pursue the study of a modern or classical language and are urged to continue through a three year sequence. Research indicates that students who have comprehension of the culture, history, geography, and language of a foreign country will also acquire a better knowledge of English. This understanding leads to higher scores on the verbal sections of the college entrance exams. Language study may make graduates more competitive in the job market. Students considering careers in foreign service, international trade, banking, government, publishing, interpreting, education, and travel are advised to study a world language. In the modern languages offered, an emphasis is placed on oral communication, while structure is learned in conjunction with this vocabulary acquisition.

Special Notes:

• It is recommended that students requesting the first year of a language have at least a “C” average in mainstreamed English for the preceding year in order to meet with success.

• Students who pass a language level with a “C” or higher are not permitted to repeat that same level.

• Students who have interrupted their language sequence will be evaluated for appropriate placement.

• Students who fail a language level two times will not be permitted to enroll in the same level of the language for a third time. This includes the 8th grade year of a language study.

Major Electives

Students may select Modern Language 1, 2, 3, 4 and 5/AP to study French, German, and/or Spanish. Course numbers by specific language follow the description of Modern Language 5/AP.

MODERN LANGUAGE 1  
Level 5.0  
(6 periods – 1 credit)

First level modern foreign language is a course designed to give the student a good foundation by combining the basic language skills: listening, speaking, reading, and writing. Students learn fundamental grammar and theme-based vocabulary. Emphasis is placed on the oral aspects of the language and an appreciation of culture.

MODERN LANGUAGE 2  
Level 5.0  
(6 periods – 1 credit)

In Modern Language 2, a continuation of the first level, students increase their familiarity with vocabulary through increased practice with oral drill, listening and writing. More complex structure is studied, and new verb tenses are added. Elementary reading is expanded and cultural aspects are studied. Continued emphasis is placed on oral proficiency based on the vocabulary and structure studied.

Prerequisite: “C” or higher in previous year course

MODERN LANGUAGE 3  
Level 5.0  
(6 periods – 1 credit)

Students planning to proceed to years 4 and 5 of language study are urged to schedule year 3 at the 6.0 level. Year 4 is offered only at the 6.0 Honors level.

To enroll in the same level of the language for a third time. This includes the 8th grade year of a language study.
2017-2018 PROGRAM OF ACADEMIC STUDIES

COURSE DESCRIPTIONS (GRADES 10-12)

Level 6.0 (Honors) (6 periods – 1 credit)
6.0 students will be expected to develop competencies at a faster pace. Modern Language 3, 6.0 presents a more complex vocabulary and grammar to develop and improve speaking, listening, reading and writing skills. Students are challenged to use the increased vocabulary in daily conversations and to understand and employ additional verb tenses in written assignments. Reading selections are offered in the target language.

Prerequisite: “B” or higher in second year course

MODERN LANGUAGE 4
Level 6.0 (Honors) [Juniors & Seniors] (6 periods – 1 credit)
More emphasis is placed upon reading in the target language and upon self-expression in writing. A grammar review is combined with the introduction of remaining essential grammar. Oral skills continue to be developed.

Prerequisite: “C+++” or higher in third year of 6.0 course

MODERN LANGUAGE 5/AP
Level 6.5 [Seniors] (6 periods – 1 credit)
This most advanced level, with the exception of grammar study, classes are conducted in the target language. The student is expected to use the spoken language in class. Emphasis is placed on self-expression in the language through writing and oral participation. Cultural topics are conveyed through the use of authentic realia (magazines, videos, newspapers, etc.). Grammar points are refined, and an appreciation of literature without translation is developed. The AP test is available for interested students but is not a course requirement.

Prerequisite: “B” or higher in year 4

5.0 COURSES
Spanish 1-4215 French 1-4315 German 1-4415
Spanish 2-4225 French 2-4325 German 2-4425
Spanish 3-4235 French 3-4335 German 3-4435

6.0 HONORS COURSES
Spanish 3-4236 * French 3-4336 German 3-4436
Spanish 4-4246 * French 4-4346 German 4-4446

6.5 COURSES
AP Spanish-4257 AP French-4357 AP German-4457

LATIN 1
Level 5.0 (6 periods – 1 credit)
Latin 1 is a beginning course in Latin grammar through which the student learns to read and write the language on an elementary level. It also introduces the student to the study of Roman civilization, and Greek and Roman mythology. Emphasis is placed on the contribution of Latin to the English language, thus helping to develop the student’s English verbal skills.

Prerequisite: “B” or higher in Japanese 1

LATIN 2
Level 5.0 (6 periods – 1 credit)
Latin 2 continues the study of Latin grammar and vocabulary. Readings are selected to introduce more advanced grammatical constructions. Roman civilization, Greek and Roman mythology, and English word derivation also continue to be emphasized.

Note: See prerequisite from Modern Language 2

LATIN 3
Level 5.0 (6 periods – 1 credit)
Latin 3 completes the study of grammatical constructions and continues with more advanced vocabulary and study of Roman civilization. Literature selections will be adaptations of the originals.

Note: See prerequisite from Modern Language Level 5.0

LATIN 3
Level 6.0 (Honors) (6 periods – 1 credit)
Latin 3 completes the study of grammatical constructions and continues with more advanced vocabulary and study of Roman civilizations. Representative Roman authors are studied in a survey of original Latin literature and history.

Note: See prerequisite from Modern Language Level 6.0

LATIN 4 (HONORS)
Level 6.0 [Juniors & Seniors] (6 periods – 1 credit)
The lyric poetry of Catullus combined with works of Ovid, Horace, Cicero, and Platus are studied. Emphasis is placed on developing students’ skills in reading Latin, critical commentary, and recognition of literary devices. Studies in Ancient Roman and Greek civilization parallel the course. Ongoing grammar and vocabulary review support the reading studies, and selections from prose historical authors will supplement reading comprehension skills.

Prerequisite: “B” or higher in Latin 3

AP LATIN
Level 6.5 [Seniors] (6 periods – 1 credit)
This course prepares the student for taking the Advanced Placement examination in Latin, including sections from the war memoirs of Rome’s greatest general, Caesar’s Gallic Wars, and the Aeneid, a poem by Rome’s greatest epic poet Vergil. Selections will be read from both books in Latin, and the course will consist in an ongoing discussion of the overall works and their cultural, literary, and historical impact. Skills developed include close, analytical reading; rhetorical critique and analysis; language mastery; and correlation of the literature with the significant events from which it emerged.

Prerequisite: “B” or higher in Latin 3-6.0

JAPANESE 1
Level 5.0 (6 periods – 1 credit)
This course, the first year of a planned four-year sequence in modern Japanese, includes an introduction to the basic conversational patterns and elementary written form of the language, and an initial overview of the Japanese people, their daily lives, and their rich cultural heritage. Special emphasis is put on the development of listening and oral communication. Hiragana, the system of writing native Japanese words, is introduced.

JAPANESE 2
Level 5.0 (6 periods – 1 credit)
This course reviews basic grammar concepts, develops communication skills, and introduces increasingly more complex vocabulary and structures. Katakana, the system of writing words from the West, is introduced. Japanese culture and a brief overview of Japanese history are also introduced.

Prerequisite: “C” or higher in Japanese 1

JAPANESE 3
Level 6.0 [Juniors and Seniors] (6 periods – 1 credit)
This third level course introduces increasingly more complex sentence structures, vocabulary, idiomatic expressions, adjective/verb conjugations, and verb tenses. More emphasis is placed upon reading and writing of Kanji, the writing system using characters from Chinese language. Students are strongly encouraged to use the spoken language in daily conversation in class. Plain or informal forms of Japanese expressions are emphasized so that students can communicate with peers.

Prerequisite: “B” or higher in Japanese 2
AP JAPANESE 4547
Level 6.5 [Juniors and Seniors] (6 periods – 1 credit)
On this most advanced level, with the exception of grammar study, classes are conducted in the target language. The student is expected to use the spoken language in class. Emphasis is placed on self-expression in the language through writing and oral participation. Cultural topics are conveyed through the use of authentic reals (magazines, videos, newspapers, etc.). Grammar points are refined, and an appreciation of literature without translation is developed. Students are expected to be able to interpret and produce texts using the kanji referenced in the College Board AP course descriptions. The AP test is available for interested students but is not a course requirement.
Prerequisite: “B” or higher in year 3.

INDIVIDUALIZED PROGRAMS

AP Capstone
AP Capstone is an innovative program from the College Board that equips students with the independent research, collaborative teamwork, and communication skills that are increasingly valued by colleges. It is built on the foundation of a new, two-course high school sequence – AP Seminar and AP Research – and is designed to complement and enhance the in-depth discipline-specific study provided through AP courses. The AP Capstone Diploma is awarded to students who earn scores of 3 or higher in both of the AP Capstone courses and on four additional AP Exams of their choosing. The AP Seminar and Research Certificate is awarded to students who earn scores of 3 or higher in both of the AP Capstone courses.

AP SEMINAR 9017
Level 6.5 (6 periods – 1 credit)
Students will investigate real-world issues from multiple perspectives, through gathering and analyzing information from various sources in order to develop credible and valid evidence-based arguments. Fundamental components of this course include the exploration of different points of view and making connections across disciplines as students gain a rich appreciation for the complexity of important issues. Students may take the AP Seminar as a stand-alone course or sequentially enroll in both AP Capstone courses.
Prerequisite: Enrolled in a 6.0 or above English course.

AP RESEARCH 9027
[Juniors & Seniors] (6 periods – 1 credit)
In AP Research, students independently design, plan and conduct a yearlong research-based investigation on a topic of individual interest. Students explore their skill development, document their processes, and curate the artifacts of the development of their scholarly work in a portfolio. The course culminates in an academic paper of approximately 4000–5000 words (accompanied by a performance or exhibition of product, where applicable) and a presentation with an oral defense.
Prerequisite: Successful completion of AP Seminar.

CAREER APPRENTICESHIP PROGRAM 9125
Level 5.0 [Seniors] (40 hours – 0.5 credit)
Beginning in Summer 2017, North Penn High School rising seniors will be able to explore career interests in a hands-on manner by working at an off-campus location during the summer months prior to their senior year. Enrollment may be limited based on the number of placement opportunities that are available.

English As A Second Language
The North Penn School District recognizes its responsibility to offer programs for the diverse population it serves. English as a Second Language (ESL) is intended for those students whose native language is not English. Skills in listening, speaking, reading, and writing English are stressed. According to the individual’s needs, courses may be offered in English, social studies, science, and health. All ESL courses are offered at the 4.0 level. ESL English courses for 9th, 10th, 11th and 12th grade may count for regular English courses. Completion of one full year of regular high school English prior to graduation is recommended. Course codes are listed below and in the course listing section.

ESL 1 ENGLISH/READING 0018
Level 4.0 (12 periods – 2 credits)
This course is designed for students scoring below a 2.0 in the W-Apt or ACCESS test. Students are instructed in reading, writing, listening and speaking according to the PA State ESL standards and the WIDA standards. Students are prepared to take the WIDA
ACCES tier A or B. Students receive a period of instruction in both ESL English and ESL reading.

**ESL 2 ENGLISH/READING** 0028
Level 4.0  (12 periods – 2 credits)
Modified Course Description: This course is designed for students scoring between a 2.0 and 3.0 in the W-Apt or ACCESS test. Students are instructed in reading, writing, listening and speaking according to the PA State ESL standards and the WIDA standards. Students are prepared to take the WIDA ACCESS tier B or C. Students receive a period of instruction in both ESL English and ESL reading.

**ESL 3 ENGLISH** 0038
Level 4.0  (6 periods – 1 credit)
This course is to be taken in conjunction with a language arts major class. It is designed for students scoring between a 3.0 and 4.0 in the W-Apt or ACCESS test. Students are instructed in reading, writing, listening, and speaking according to the PA State ESL standards and the WIDA standards. Students are prepared to take the WIDA ACCESS tier B or C.

**ESL 4 ENGLISH** 0048
Level 4.0  (6 periods – 1 credit)
Depending on a student’s Lexile level and ACCESS scores, either a language arts major or an additional English course may be taken. This course is designed for students scoring above a 4.0 in the W-Apt or ACCESS test. This course prepares students to transition into regular mainstream English. It is designed to support students in preparation for the PA Keystone English Literature and Composition test and is based on a modified regular English curriculum.

**ESL RESOURCE** 8428
(2 periods – 0.3 credit)
This two period per cycle course supports ELLs with math and reading interventions. ELLs who are struggling with the English academic language receive support and more resources from an ESL teacher.

### International Exchange Program

The North Penn International Friendship Committee (NPIFC) provides opportunities for North Penn students to engage in a study program for a school year or a summer program abroad. North Penn has a direct exchange with partner schools in Aalen, Germany; Salzgitter, Germany; Yokkaichi, Japan; Madrid, Spain, and Toulouse, France. The NPIFC provides a full scholarship to attend the partner schools. Students can be considered for selection to this program by completing an application and an interview. Students are only eligible for this program during their junior year and therefore must apply early in their sophomore year.

### Work Study Program

<table>
<thead>
<tr>
<th>Level</th>
<th>Credit Per Year</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>2 credits/year</td>
<td>2 periods per day/12 periods per cycle</td>
</tr>
<tr>
<td>4.0</td>
<td>3 credits/year</td>
<td>3 periods per day/18 periods per cycle</td>
</tr>
<tr>
<td>4.0</td>
<td>4 credits/year</td>
<td>4 periods per day/24 periods per cycle</td>
</tr>
</tbody>
</table>

The North Penn High School Work Study Program is designed to help eligible seniors explore a work interest in a hands-on manner. By working at an off-campus location, students are provided with the opportunity to make a more informed decision on their future career choice. The program utilizes supervision by both the North Penn High School Supervisor and an employer, and students earn a wage. Students receive high school credit for their participation in the program. Work Study students must provide their own transportation. Other responsibilities the students will have include: keeping track of bi-weekly time sheets and preparing a written report each quarter.

**Prerequisite:** Students must have successfully completed all of their courses required for graduation through the end of 11th grade and have a 2.5 weighted GPA.

**NOTE:** Students on partial day off-campus programs are obligated to schedule a minimum of 3 majors plus physical education.

### Career Exploration Program

<table>
<thead>
<tr>
<th>Level</th>
<th>Credit Per Year</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td>1 credit/year</td>
<td>2 periods per day/12 periods per cycle</td>
</tr>
<tr>
<td>5.0</td>
<td>1.5 credits/year</td>
<td>3 periods per day/18 periods per cycle</td>
</tr>
<tr>
<td>5.0</td>
<td>2 credits/year</td>
<td>4 periods per day/24 periods per cycle</td>
</tr>
</tbody>
</table>

The North Penn High School Career Exploration Program is designed to help eligible seniors explore a career interest in a hands-on manner. By working at an off-campus location, students are provided with the opportunity to make a more informed decision as to their future career choice. The program utilizes supervision by both the North Penn High School Supervisor and a community sponsor. Students receive high school credit for their participation in the program. Students must meet the following requirements:

1. Enroll in a non-wage capacity.
2. Keep a journal of daily events on the job.
3. Complete bi-weekly time sheets.
4. Prepare a written report each quarter.
5. Provide their own transportation.
**Special Education**

The special education program is designed to allow eligible and/or exceptional students the opportunity to reach their potential. Specially designed instruction may be provided in a Learning Support, Emotional Support, Life Skills Support, Autistic Support, or Gifted Support Program, depending on the student's individual needs. Eligibility for special education is determined through a comprehensive evaluation. If the student is determined to need special education instruction, the IEP team provides the exceptional student the most appropriate educational program and placement. Regulations for such placement are established by the Commonwealth of Pennsylvania. Depending on the student's category of disability, students are re-evaluated every two or three years to decide the continued appropriateness of their special education program. Eligible students may receive services until they are 21.

**Program Descriptions • Grades 9 – 12**

**SUPPORTS FOR STUDENTS WITH IEPS**

This program is designed to be individualized for students who are eligible for an Individual Education Plan (IEP). The main focus in this program is the General Education Curriculum with modifications and accommodations as determined by the student's IEP. If determined by the student's IEP team, a student may participate in a supplemental curriculum. Students who are eligible for behavioral/emotional support will be provided support as outlined in the student's IEP. This program will support student's transition to adult life as determined in the student's IEP.

**AUTISTIC SUPPORT**

This program is designed to be individualized for students who are eligible for an Individual Education Plan (IEP). This program focuses on the General Education Curriculum when appropriate and determined by the IEP team. This program provides support for students with social, communication, academic, behavioral, and transition needs. This program will support the student's transition to adult life as determined in the student's IEP.

**EMOTIONAL SUPPORT**

This program is designed to be individualized for students who are eligible for an Individual Education Plan (IEP). This program focuses on the General Education Curriculum and provides support and in-school counseling for students who demonstrate emotional and/or behavioral needs that impede their ability to access their education. This program will support student's transition to adult life as determined in the student's IEP.

**Life Skills Support**

This program is designed to be individualized for students who are eligible for an Individual Education Plan (IEP). This program focuses on the development of vocational skills. When appropriate and determined by the IEP team, students may participate in Regular Education classes with support from the Life Skills Support Program. This program provides support for students with social, communication, academic and transition needs. This program will support student's transition to adult life as determined in the student's IEP.

**Academic Support – 9th Grade**

Academic Support is available to IEP students. Instead of two (2) study halls per cycle, a student or teacher may request two (2) or four (4) periods of Academic Support per cycle. All fully mainstreamed students will receive monitoring and support from a resource teacher.

**SPECIAL EDUCATION SUPPORT SYSTEMS**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Life Skills Support</th>
<th>Autistic Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing–6 periods</td>
<td>00L1</td>
<td>00A1</td>
</tr>
<tr>
<td>Social Studies–6 periods</td>
<td>10L1</td>
<td>10A1</td>
</tr>
<tr>
<td>Mathematics–6 periods</td>
<td>20L1</td>
<td>20A1</td>
</tr>
<tr>
<td>Science–6 periods</td>
<td>30L1</td>
<td>30A1</td>
</tr>
<tr>
<td>Reading–6 periods</td>
<td>40L1</td>
<td>40A1</td>
</tr>
<tr>
<td>Vocational Skills–6 periods</td>
<td>99L1</td>
<td>99A1</td>
</tr>
<tr>
<td>Health–2 periods</td>
<td>72L1</td>
<td>72A1</td>
</tr>
<tr>
<td>Physical Education–2 periods</td>
<td>8972</td>
<td>89A2</td>
</tr>
<tr>
<td>Music*–2 periods</td>
<td>8963</td>
<td>8963</td>
</tr>
<tr>
<td>Drama*–2 periods</td>
<td>8998</td>
<td>8998</td>
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<tr>
<td>Family &amp; Consumer Science*–2 periods</td>
<td>99L2</td>
<td>99A2</td>
</tr>
<tr>
<td>Art*–2 periods</td>
<td>8960</td>
<td>8960</td>
</tr>
</tbody>
</table>

*Minors will rotate on a cyclical cycle

**Full Time Learning Support**

This program is designed to be individualized for students who are eligible for an Individual Education Plan (IEP). This program focuses on the core general education curriculum at a modified level adjusted to fit each student's individualized strengths. This program provides support for student's social, academic, behavioral, and transition needs. This program will support the student's transition to adult life as determined by student's IEP.

<table>
<thead>
<tr>
<th>Full time Subject</th>
<th>9th</th>
<th>9th</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>0091</td>
<td>0092</td>
</tr>
<tr>
<td>America In History 2</td>
<td>1091</td>
<td>1092</td>
</tr>
<tr>
<td>Algebra 1 Part 1</td>
<td>2105BB</td>
<td>2105BB</td>
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<tr>
<td>Physical Science</td>
<td>3091</td>
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<tr>
<td>Health 9</td>
<td>7289</td>
<td>7289</td>
</tr>
<tr>
<td>Reading*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplemental Support</td>
<td>8992(2 periods)</td>
<td>8994(4 periods)</td>
</tr>
</tbody>
</table>
INDIVIDUALIZED PROGRAMS

2017-2018 PROGRAM OF ACADEMIC STUDIES

<table>
<thead>
<tr>
<th>Full time Subject</th>
<th>10th</th>
<th>11th</th>
<th>12th</th>
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</thead>
<tbody>
<tr>
<td>Reading &amp; English - 12 periods</td>
<td>01801</td>
<td>01802</td>
<td>01803</td>
</tr>
<tr>
<td>Social Studies - 6 periods</td>
<td>10311</td>
<td>10312</td>
<td>10313</td>
</tr>
<tr>
<td>Transition Math - 6 periods</td>
<td>20311</td>
<td>20312</td>
<td>20313</td>
</tr>
<tr>
<td>Science - 6 periods</td>
<td>30311</td>
<td>30312</td>
<td>30313</td>
</tr>
<tr>
<td>Vocational Skills - 4 periods</td>
<td>99311</td>
<td>99312</td>
<td>99313</td>
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<tr>
<td>Occupational Seminar - 2 periods</td>
<td>79311</td>
<td>79312</td>
<td>79313</td>
</tr>
<tr>
<td>Health - 2 periods</td>
<td>72311</td>
<td>72312</td>
<td>N/A</td>
</tr>
<tr>
<td>Physical Education - 2 periods</td>
<td>7900</td>
<td>7910</td>
<td>7920</td>
</tr>
<tr>
<td>Mainstream Elective minor - 2 periods</td>
<td>79312</td>
<td>79313</td>
<td>79313</td>
</tr>
</tbody>
</table>

ACADEMIC COACHING AND INTERVENTION 8999
(2 periods – 0.3 credit)

The purpose of this course is to provide remediation in reading, writing, mathematics, and study skills. Remediation will be provided through small group instruction and a web-based program in the supplemental classroom. Students are then given the opportunity to apply the intervention strategies and study skills to their academic classes in the itinerant classroom using classroom assignments. Students may earn up to 0.3 credits per school year in support classes.

Course Offerings – Level 4.0

Within the Special Education Department, major courses are offered at three skill levels. Course numbers end in a “1, 2, or 3” to indicate the skill level, with “3” being the highest skill level. For ranking purposes, all majors in the Special Education program are considered “4.0” courses and meet six times per cycle, unless otherwise noted.

VOCATIONAL SKILLS 9931
(4 periods – 0.7 credits)

Vocational Skills class is designed to simulate a work environment. Students participate in hands-on activities that will teach the necessary skills for working and living in the community. This course is designed for AS, LSS, FTLS students.

OCCUPATIONAL SEMINAR 7931
(2 periods – 0.3 credits)

This course is designed to prepare students with the necessary skills for obtaining and/or maintaining a position in employment or a career study position. Hands-on practice for job applications, interviewing practice and resume writing are just a few skills emphasized. Students who are planning to enroll in the Career/Work Exploratory Program for their senior year are recommended to take this course.

Career/Work Exploratory Program

Level 4.0 [Special Education Seniors]
2 periods per day/12 periods per cycle/1 credit per year: 9624
3 periods per day/18 periods per cycle/1.5 credits per year: 9634
4 periods per day/24 periods per cycle/2 credits per year: 9644

The Career/Work Exploration Program provides 2 options for eligible seniors in the emotional support, learning support, and life skills support programs. The work experience option places students in a work site within the local community for a partial day with the hope that this experience will lead to future employment. The career experience option enables students to work in a career field for a partial day and is designed to assist the student in making appropriate career choices. Students in the career/work exploration are closely supervised and provided job counseling. Eligible seniors need to make application in writing to the career/work experience teacher.

Prerequisite: Students must have successfully completed all of their courses required for graduation through the end of 11th grade. (Any exceptions must meet the provisions of the student’s IEP)

Job Training Program

9140

The Job Training Program will provide IEP students with a sampling of guided work opportunities at a variety of locations in the county. The students will work with a job coach in order to develop specific job skills. Students will remain in each for approximately eight weeks; they will then rotate to a new position. The goal of the program will be to offer a variety of job experiences in order to expand vocational interests of the student. Students may not self-select this course; placement in this program will be an IEP team decision.

Post-Twelve Course Offerings:

Courses for students returning post-graduation for training are:

MATH EXTENSIONS 9720
Level 4.0 [Post-Twelve] (6 periods – 0.0 credit)

Students who are returning for post-twelve opportunities will focus on real-world applications of math concepts in this course. Students will work on banking, money management, budget planning, and basic math concepts that have not yet been mastered.

Prerequisite: IEP students who have met graduation requirements and are continuing their education post-graduation.

READING EXTENSIONS 9740
Level 4.0 [Post-Twelve] (6 periods – 0.0 credit)

Students who are returning for post-twelve opportunities may elect to continue with improving their reading skills. In this course, students will learn and practice necessary reading skills, comprehension strategies, and reading for everyday experiences.

Prerequisite: IEP students who have met graduation requirements and are continuing their education post-graduation.

INDEPENDENT LIVING 9760
Level 4.0 [Post-Twelve] (6 periods – 0.0 credit)

Students learn essential skills for living on their own which includes career choices, time management, money management, apartment/dorm life, major purchases, decision-making, selection of insurance, care of clothing, purchasing of a car, relating to children and senior adults, travel training, and meal management. Guest speakers from the community and outside agencies will be actively involved in discussing the above topics with students. This course will be taught by existing staff certified in Special Ed.

Prerequisite: IEP students who have met graduation requirements and are continuing their education post-graduation.
2017-2018 PROGRAM OF ACADEMIC STUDIES

INDIVIDUALIZED PROGRAMS

OCCUPATIONAL SEMINAR  9780
Level 4.0  [Post-Twelve]  (6 periods – 0.0 credit)
This course is designed to prepare students with the necessary skills for obtaining and/or maintaining a position in employment or a career study position. Hands-on practice for job applications, interviewing practice and resume writing are just a few skills emphasized.

Opportunities For Gifted
Several courses designed specifically to challenge students are offered at each grade level. These courses include advanced placement courses, gifted mentorship, interdisciplinary studies, and other selective courses.

GIFTED MENTORSHIP  9036
Level 6.0  [Juniors & Seniors]  (6 periods – 1 credit)
With approval, students may participate in mentorship programs when teachers or community members with expertise in the mentorship topic area are available. Students are expected to maintain logs, write progress reports, and carry out scholarly research projects related to some aspect of the field in which they are working. Students make formal oral presentations of their mentorship experiences at the end of the year. This program stresses the development of research, communication, critical thinking, affective, and creative skills. Students must pre-register for this course during course selection. See staff in E021 for information.

A Gifted Individual Education Program (GIEP) that reflects the course goals and objectives is written for each student and reviewed on an individual basis for all students in special education programs.

Gifted students electing to participate in regular education are monitored, and those requiring a differentiated GIEP are served by a teacher of the gifted.

Prerequisite: Proficient or above on the Algebra 1, Biology and English Literature Keystone Exams.

Summer School Program

For Remediation:
Remedial Summer School is offered at North Penn so that students may remediate courses which they have not passed during the regularly scheduled school year.

Failure in a subject is indicated by a grade of “E” or “F”. Both grades result in a loss of credit for the course, but each has a different implication for remediation.

A final grade of E indicates a final average of from 50% to 64% for the course in question. If the subject is offered in summer school, a grade of E means that the student qualifies to remediate the course in the typical 50-hour program involving one class session per day.

Students with a final grade average below 50% (49% or below) will receive a final report card grade of “F” and will NOT be permitted to remediate the course.

For Acceleration/Enrichment:
Courses offered in this summer program afford students the opportunity to expand their skills in several areas. The S.A.T. Preparation course and Algebra 2 Prep are examples of courses that can be taken in the summer so that students will have room in their schedules for other offerings during the school year. Specifics on offerings can be obtained from the administrative office responsible for the entire summer school program. Sufficient enrollments are needed for any course offering to run.

For Keystone Intervention:

ALGEBRA 1 KEYSTONE SUMMER INTERVENTION
Students can take this course if they scored at the basic level on their most recent Algebra 1 Keystone Exam. This course is designed to provide a review of fundamental skills taught in Algebra 1 so that students can become proficient at the next administration of the Algebra 1 Keystone Exam. The course concludes with the administration of the Summer (August) Algebra 1 Keystone exam. There is a fee associated with this course.

BIOLOGY KEYSTONE SUMMER INTERVENTION
Students can take this course if they scored at the basic level on their most recent Biology Keystone Exam. This course is designed to provide a review of fundamental skills taught in Biology so that students can become proficient at the next administration of the Biology Keystone Exam. The course concludes with the administration of the Summer (August) Biology Keystone exam. There is a fee associated with this course.

LITERATURE KEYSTONE SUMMER INTERVENTION
Students can take this course if they scored at the basic level on their most recent Literature Keystone Exam. This course is designed to provide a review of fundamental skills taught in English so that students can become proficient at the next administration of the Literature Keystone Exam. The course concludes with the administration of the Summer (August) Literature Keystone exam. There is a fee associated with this course.
Northbridge School provides an additional pathway for North Penn School District students who could benefit academically from a smaller school setting and personalized instruction aimed at helping students meet yearly academic requirements and recover credits. The school is not designed to be a permanent home school for students, but an intervention program to improve academic performance on each student’s journey to receiving a North Penn High School diploma. The school uses an instructional model that is focused on individualized learning opportunities including a robust computer-based model for curriculum, instruction, and assessment in multiple content areas.

**English**

**ENGLISH A ✿ 00A4NBK**

**Level 4.0**

(6 periods - 1.0 credit)

The goal of English A is the mastery of the English literature and language in order to achieve proficiency on the English Literature Keystone. This course provides students with a variety of writing experiences based on the North Penn Writing Program focusing on text-dependent analysis. The course also stresses sentence structure and the more difficult aspects of correct usage. Students analyze both fiction and non-fiction and using literary terminology and rhetorical devices.

**ENGLISH B ✿ 00B4NB**

**Level 4.0**

(6 periods - 1.0 credit)

The goal of English B is the mastery of the English literature language to improve communication skills and to foster the knowledge and appreciation of literature. A structured study of grammar, composition, speech and vocabulary builds upon prior knowledge. This course provides students with a variety of writing experiences based on the North Penn Writing Program focusing on text-dependent analysis. The course includes the study of selected pieces of fiction, non-fiction, poetry, drama, essays and novels. The course is designed to incorporate reading, writing, grammar and research skills while focusing on a particular theme, genre or literary period.

**ENGLISH/READING ✿ 0031NB/4031NB**

**Level 4.0**

(12 periods - 2.0 credit)

A research-based program designed to address gaps in students’ skills through the use of a computer program, literature, and direct instruction in reading skills. The program focuses on comprehension, vocabulary, word study and writing.

**Mathematics**

**ALGEBRA 1 2105NBK**

**Level 5.0**

(12 periods - 2.0 credit)

This Keystone course is designed to develop basic algebraic concepts, principles and manipulations. Major topics include: functions, linear equations and inequalities, exponents, polynomials, factoring, graphing, quadratic equations, proportions, radicals and applications. Technology is used in a small classroom environment for a blended-learning experience.

**ALGEBRA 1B 2105BNB**

**Level 5.0**

(12 periods - 2.0 credit)

This course is designed to develop basic algebraic concepts, principles and manipulations. Major topics include: functions, linear equations and inequalities, exponents, polynomials, factoring, graphing, quadratic equations, proportions, radicals and applications. Technology is used in a small classroom environment for a blended-learning experience.

**Note:** Students are enrolled in Algebra 1B if they do not pass Algebra 1 or if they score Below Basic on the Algebra 1 Keystone exam.

**ALGEBRA 2 2315NB**

**Level 5.0**

(6 per/cycle - 1.0 credit)

This course includes the study of real and complex numbers, arithmetic and geometric sequences. Students will investigate the behavior of polynomial, exponential, logarithmic, and radical functions as well as solve equations, inequalities and systems when applicable. Students will also simplify radical expressions. Technology is used in a small classroom environment for a blended learning experience.

**GEOMETRY 2205NB**

**Level 5.0**

(12 per/cycle - 2.0 credit)

This course includes the study of planes, solid figures, similarity, congruence, postulates, theorems, proofs, constructions, areas and volumes. The concepts of space (solids) geometry are introduced early in this course and used thereafter. Finally the students are introduced to elementary ideas of plane analytical geometry. Technology is used in a small classroom environment for a blended learning experience.

**ALGEBRA/GEOMETRY 4 2744NB**

**Level 4.0**

(6 per/cycle - 1.0 credit)

This course will focus on the Pennslyvania Academic Standards for Mathematics and provide instruction to meet student needs in those areas. Real-world applications of the mathematical concepts will be emphasized.

**Science**

**PHYSICAL SCIENCE 3095NB**

**Level 5.0**

(6 periods - 1 credit)

This course combines a standards-aligned study of physics and chemistry concepts with an exploration of laboratory and problem-solving skills. Utilizing an inquiry-based approach, students develop an understanding of topics such as force, motion, energy, atoms, and chemical bonding. Students learn to apply process skills to reach scientific conclusions based on data and evidence. These skills form the foundation for success in future laboratory science courses.

**APPLIED BIOLOGY 3004NBK**

**Level 4.0**

(6 periods - 1 credit)

This Keystone course covers the basic foundations of cellular biology, biochemistry, genetics, evolution, and ecology. All Pennsylvania State Standards are covered in this course. The topics are covered through activities, demonstrations, labs, and homework, using a combination of digital learning, collaborative group work, and teacher-led instruction and discussions.
Semester Electives

**SELECTED TOPICS IN BIOLOGY** 3814NB
Level 4.0 (6 periods – 0.5 credit)
This supplemental instruction course is intended for students who need to retake the Biology Keystone Exam. It will review and reinforce the major concepts of the Biology curriculum and will emphasize Keystone exam preparation.

**APPLIED ECOLOGY** 3864NB
Level 4.0 (6 periods – 0.5 credit)
Applied Ecology is the study of how living things interact with each other and with their nonliving environment. During this one semester course, students will focus on the ecology of various ecosystems, the impact of humans on ecosystems and the environment, and environmental policy.

**Social Studies**

**AMERICA IN HISTORY 2** 1095NB
Level 5.0 [9th grade] (6 per/cycle – 1.0 credit)
This Social Studies curriculum reflects the PA standards in civics and government, economics, history, and geography. These standards are integrated into the study of America’s history and culture. This American History course will include the following time frame: Reconstruction through World War II. Students will have the opportunity to continue to develop their geography skills, to study primary and secondary source documents, as well as to investigate how culture and events in history have shaped the country and world in which we live. The research process, integral to the Social Studies class, is included in this curriculum.

**AMERICA IN HISTORY 3** 1004NB
Level 5.0 [10th & 11th grade] (6 per/cycle – 1.0 credit)
This required course integrates PA Standards into a study of America’s history and culture since 1945. This course, the third installment of a three part series in American history, provides opportunities for students to study the Cold War, McCarthyism and Korea, the Vietnam War and the cultural changes of the 1960s, the Great Society, Watergate, the Reagan era, the 1990s, and America at home and abroad in the era of 9/11. Current issues of the American political and societal arenas are incorporated into the course. Students will also continue to develop their geography skills, to study primary and secondary source documents, and to investigate the ways culture and events in history have shaped the country and the world in which we live. Students engage in writing and research skills addressed in the PA Core Standards.

Semester Electives

**AMERICAN GOVERNMENT** 1824NB
Level 4.0 [Seniors only] (6 periods – 0.5 credit)
All seniors are required to complete one semester of American Government. After a review of the elements of the national government and the role of political parties, this required semester course for seniors places specific emphasis on the various forms of state and local government. Citizenship, voting, and the role of interest groups and media are included as topics of study. Through classroom study and opportunities for research, field trips, guest speakers, and attendance at local government meetings, seniors will gain a greater understanding of the services provided by state and local governments to citizens, and more importantly, their responsibilities as citizens to participate in all levels of government.

**CONTEMPORARY GLOBAL ISSUES** 1864NB
Level 4.0 [Seniors only] (6 periods – 0.5 credit)
A semester elective, this internationally focused course offers a relevant and balanced analysis of major trends, issues, and challenges developing in our increasingly globalized world. Students study contemporary global conflict, economic development, human rights, and resource management by investigating the historical foundations, impact of the United States, and interconnectedness in the world today. Students will engage in research on contemporary global concerns.

**PLATO SEMESTER**
Level 4.0 (6 periods – 0.5 credit)
**ENGLISH** 08PLANB
**SOCIAL STUDIES** 18PLANB
**MATH** 28PLANB
**SCIENCE** 38PLANB
This semester course is designed to engage students in the respective discipline while utilizing hybrid learning. Students will have access to a self-paced, standards-based online learning program with a 21st century approach – engagement through the exploration of interactive, media-rich content. In conjunction with the online component of this course, a teacher will facilitate learning in a small group setting.

**PLATO FULL-YEAR**
Level 4.0 (6 periods – 1.0 credit)
**ENGLISH** 00PLANB
**SOCIAL STUDIES** 10PLANB
**MATH** 20PLANB
**SCIENCE** 30PLANB
This year-long course is designed to engage students in the respective discipline while utilizing hybrid learning. Students will have access to a self-paced, standards-based online learning program with a 21st century approach – engagement through the exploration of interactive, media-rich content. In conjunction with the online component of this course, a teacher will facilitate learning in a small group setting.

**Minor Electives**

**ART** 8600NB
(2 periods – 0.3 credit)
This course will introduce students to the different elements of art and the principles of design. Students will have the opportunity to experience many different genres of art, including but not limited to printmaking, drawing, painting, ceramics, sculpture and weaving.

**CAREER DEVELOPMENT** 9614NB
(6 partial periods – 0.3 credit)
This course will introduce students to various career pathways and help them to identify which career would be best suited for their interests and skills. Students will prepare to seek competitive employment through career research projects, working on cover letters and resumes, and interacting with guest speakers from the local business community.
HEALTH  7200NB
(2 periods – 0.3 credit)
This course is designed to promote positive decision-making when it comes to one's health. Students will explore daily living habits and learn how personal choices can impact future well-being on both an individual and societal scale. This course will incorporate topics that relate to healthy decision-making on a personal level while also exploring health as it relates to society.

PHYSICAL EDUCATION  7910NB
(2 periods/semester – 0.15 credit)
This course is designed to promote recreational activities that encourage and motivate students to maintain a healthy lifestyle. Activities will include various team sports, racquet sports, team-building activities and fitness activities.

TECHNOLOGY  8500NB
(2 periods – 0.3 credit)
This course gives the student an opportunity to explore the technology that is used in communications, construction, manufacturing, energy and transportation. Students will learn and use graphic communication, desktop publishing, graphic arts, photography, CAD, and graphic design. In addition, Adobe Photoshop, Adobe InDesign, Adobe Illustrator and other assorted programs will be incorporated into the instructional design of this course.

NORTH MONTCO TECHNICAL CAREER CENTER

North Montco Technical Career Center, located on S unmeytown Pike in Lansdale, provides vocational-technical career training opportunities for the students of five cooperating school districts: Methacton, North Penn, Perkiomen Valley, Souderton, and Wissahickon. Students can begin programs in the 9th, 10th, 11th, or 12th grade, depending upon the requirements of the course.

North Montco Technical Career Center (NMTCC) offers 22 programs within 8 cluster areas including: Construction Trades, Cosmetology, Culinary Arts, Engineering/Manufacturing, Floral Design and Landscaping, Health & Human Services, Power & Transportation and Visual Communications. The school serves approximately 1100 students from 5 surrounding school districts. Students can attend the school as either part-time or full-time students. In addition to technical training, NMTCC provides academic courses to the full-time students within all eight clusters.

Students enrolled in Technical Career Center programs traditionally attend North Montco Technical Career Center for one of three sessions offered at the Career Center (AM, MID, or PM). Participation in any course is contingent upon regular attendance and satisfactory performance.

Assignment to a session (AM, MID, PM) is based on grade level. North Penn Middle School students enrolled in the Basic Vocational Skill Training options program will be assigned to MID; North Penn High School sophomores will be assigned to AM, and they will begin their day with an academic class at 7:21 AM at the high school; North Penn High School Juniors and Seniors will be assigned to the PM session. All courses earn two credits.

The Career Center programs are designed to develop occupational and career skills and to prepare the students for further education. With appropriate selection of academic courses in the home school, North Montco Technical Career Center students may continue their education in technical schools, community colleges, or four-year colleges. Most program offerings at North Montco Technical Career Center have post-secondary articulation agreements with post-secondary technical colleges that enable students to further their career training upon graduation. These agreements are part of the Tech Prep Associate Degree Program and are defined later in this section.

DUAL ENROLLMENT
Currently, several NMTCC technical programs have established dual-enrollment partnerships with Montgomery County Community College and Reading Area Community College. Through dual enrollment opportunities, students in various programs are able to receive college credit for work they perform while attending NMTCC. The current programs include:

- Biotechnology
- Culinary Arts
- Health Occupations
- Mechatronics

Cluster Experience

North Montco Technical Career Center has adopted a career clustering approach in their curriculum. This approach is based on the concept that many clusters of occupations require common skills and knowledge. 9th grade North Montco students may rotate through the programs of one cluster for a specified time during the first marking period. Career counseling will be a vital component to ensure that realistic career objectives and goals are selected.

Please note: Only shaded “cluster” courses can be taken by incoming 9th graders.

CONSTRUCTION TRADES TECHNOLOGY CLUSTER

CONSTRUCTION CARPENTRY  6534C AM / 6634C PM
The Construction Carpentry program covers instruction in safe and proper use of hand and power tools, drywall work, counter tops, finish carpentry, as well as building wood frame structures such as rough framing, roofing and siding. Students will be required to purchase items for this program at an approximate cost of $255.
ELECTRICAL TRADES 6534E AM / 6634E PM
Experienced electricians are in serious demand. Students in the Electrical Trades program learn about residential and commercial/industrial wiring and low-voltage systems, involving communication voice data and security systems. The program consists of instruction in electrical AC-DC theory, National Electric Code, wiring methods and industrial applications. Students will be required to purchase items for this program at an approximate cost of $150.

HEATING, VENTILATION, AND AIR CONDITIONING (HVAC) 6534H AM / 6634H PM
The HVAC program consists of basic to advanced instruction in both the installation and servicing of residential systems. Students are trained in electrical principles, oil and gas heating, air conditioning, heat pumps and basic refrigeration systems. NMTCC’s HVAC program has been granted accreditation by HVAC Excellence. Students will be required to purchase items for this program at an approximate cost of $200.

COSMETOLOGY TECHNOLOGY CLUSTER
6544 AM / 6644 PM
Cosmetology students learn the competencies and skills needed to pass the Pennsylvania State Board of Cosmetology practical and written licensing exams through a program that meets the state-required hours of instruction. Students must complete 1250 hours of instruction, with at least a 75% average, before they are eligible to take the State Board of Cosmetology license examination. The program covers instruction in a) Cosmetology (hair care), b) Esthetics (skin care and make-up), c) Nail Technology, and d) Salon management. Students apply theories and skills and strengthen competencies through hands-on experience including a clinic open to the community. Students will be required to purchase items for this program at an approximate cost of $500.

CULINARY ARTS TECHNOLOGY CLUSTER
6554 AM / 6654 PM
From prep cook to executive chef, the culinary industry offers a world of career possibilities. The Culinary Arts program is nationally certified as an American Culinary Federation Education Foundation (ACFEF) Access program. Learning takes place in the classroom and kitchen. Students also intern at local restaurants and other businesses and participate in public service events and culinary skills competitions. After completing a one year rotation, students have the opportunity to specialize in one of three areas: baking and pastry art, culinary chef, institutional (large quantity) food preparation. Students completing the program may enter the workforce or continue their education in college. Students will be required to purchase items for this program at an approximate cost of $100-250 depending on specialization.

ENGINEERING/MANUFACTURING TECHNOLOGY CLUSTER
DRAFTING & DESIGN 6564D AM / 6664D PM & 6565D AM / 6665D PM
Students in the Drafting & Design program work with industry-stand-

dard software, computers and equipment to prepare for careers in drafting. Throughout the training at NMTCC, students will gradually master techniques in Drafting and Design. The course will start with Basic Drafting that includes Orthographic Projection, Auxiliary Views, Section Views, Dimensioning, Fasteners, Axonometric, and other basic drafting skills and will continue with learning how to use many of the latest software packages. These include the latest versions of AutoCAD, Architectural Desktop, Inventor, 3D Studio, and other related software packages. Students will be required to purchase items for this program at an approximate cost of $25.

PRECISION MACHINING 6564P AM / 6664P PM & 6565P AM / 6665P PM
The Precision Machining Technology course of study is designed to prepare the interested student for varied manufacturing opportunities. The demands for the highly skilled craftsman are many. From Machine Operator to the Toolmaker, from the Computer Numerical Control (CNC) Operator to the CNC Programmer, all start with the experience and training found in NMTCC’s complete precision machining lab.

The program is nationally certified with the National Institute for Metalworking Skills (NIMS). It emphasizes the safe and proper operation of metalworking machine tools such as lathes, milling machines, precision grinders, and drill presses. The course also includes an introduction to layout and blueprint reading and instruction in computer numerical control (CNC) machining. Success in this field requires a strong work discipline, good eyesight, an aptitude for math, sound logic and manual dexterity. Students will be required to purchase items for this program at an approximate cost of $100.

MECHATRONICS 6564R AM / 6565R AM & 6664R PM / 6665R PM
The Mechatronics program offered at NMTCC provides a synergistic approach to the understanding of the principles in the engineering field. The program focuses on mechatronics engineering technology, which is a multidisciplinary field where workers design, troubleshoot, maintain and repair sophisticated automated equipment through a systems approach. Students will perform activities and obtain fundamental knowledge in the following areas: electrical, electronics, robotics, mechanical systems, fluid power systems, programmable logic controllers, control systems and mechatronics. Engineers and technicians with training in mechatronic systems have the greatest career mobility across technical disciplines. Students will be required to purchase items for this program at an approximate cost of $25. In partnership with Reading Area Community College, students can earn up to 16 college credits for successful completion of their technical course work completed at NMTCC.

WELDING & FABRICATION 6564W AM / 6664W PM & 6565W AM / 6665W PM
Welding and Fabrication students learn the skills and techniques necessary for success in a career that values well trained, experienced workers. They learn MIG and TIG welding as well as gas welding and about the operation of welding and metal fabrication machinery. Students will be required to purchase items for this program at an approximate cost of $275.
### HORTICULTURAL

**6574 AM / 6574M / 6674 PM**

The Horticultural program will provide students with a working knowledge, understanding and application of skills important to establishing, maintaining and managing horticultural enterprises. Practical landscape experience will be gained in planting and maintaining areas of the school campus. Operating a small production greenhouse and a school flower shop will enhance business and managerial skills. Students design arrangements for sale in the school store, and take orders for special events. Students will be required to purchase items for this program at an approximate cost of $75.

### HEALTH & HUMAN SERVICES

#### TECHNOLOGY CLUSTER

**BIOTECHNOLOGY 6625 PM**

Biotechnology is a diverse and challenging field with excellent opportunities for advancement and career growth in pharmaceutical and biotechnology companies, as well as research and clinical laboratories. The program introduces students to core competencies and practical applications of principles and techniques. Students comply with safety guidelines while learning standard laboratory techniques of microbiology, preparing media and solutions and maintaining inventory and supplies. Specialized training is then provided in cell culture, protein purification, recombinant DNA technology, and forensics.

This is a laboratory intensive program that integrates technical competency with employability skills and related academic content.

In partnership with Montgomery County Community College, a junior/senior course is available at NMTCC. Students earn eight college credits for an introductory survey course in Biotechnology and a laboratory course emphasizing technical skills and instrumentation. The application process includes a personal interview, a visit to the Biotechnology laboratory, a letter of recommendation from a science teacher, and submission of a completed application form with a high school transcript. Acceptance into the program is determined in the spring. Students accepted into the morning session are required to provide their own transportation to NMTCC, since class begins at 7:30 am. Students accepted into afternoons session are transported by their sending school. Students will be required to purchase items for this program at an approximate cost of $75.

**Prerequisite:** Successful completion of Biology and concurrently taking Chemistry

### HEALTH OCCUPATIONS

**6584H AM / 6684M MID / 6684H PM**

Health Occupations Technology curriculum focuses on the delivery of quality healthcare to clients in various settings. It includes hands-on experience at local health care facilities and provides the technical training needed to pursue a health care career.

This curriculum includes a one-year, state-approved nurse aide training program which all students are expected to complete after satisfactory mastery of the core skills.

A physical exam stating that the candidate is free of infectious disease, negative two-step tuberculosis test, proof of Hepatitis B vaccination, and a cleared Criminal Record Check must be obtained prior to entrance into the program. These requirements must be fulfilled every year for enrollment. Students will be required to purchase items for this program at an approximate cost of $300.

### PROTECTIVE SERVICES 6704 AM / 6804 PM

Protective Services Technology program will provide students with an experience in the general public service occupation cluster. After covering a broad curriculum, students will specialize in several aspects of emergency medical service, police science, security and firefighting and other related occupational fields. Students are encouraged to pursue post-secondary training for more career opportunities. Students are encouraged to pursue post-secondary training for more career opportunities.

Community service is also a requirement of this program.

A clear Criminal Record Check must be obtained prior to entrance into the program.

Students will be required to purchase items for this program at an approximate cost of $200.

### POWER & TRANSPORTATION

#### TECHNOLOGY CLUSTER

**AUTO COLLISION REPAIR 6594C AM / 6694C PM**

This course is focused on high tech training necessary to diagnose and repair the finish coatings, cosmetic features, structure, and complex components/systems in today's automobiles. Any student successfully completing this program, or a segment of specialized instruction, can expect to be prepared for employment in this industry, or pursue advanced technical training at the post-secondary level and be ready for Automotive Service Excellence (ASE) certification.

Students will be required to purchase items for this program at an approximate cost of $150.

**AUTOMOTIVE TECHNOLOGY 6594A AM / 6694A PM**

In accordance with National Automotive Technicians Education Foundation/Institute for Automotive Service Excellence (NATEF/ASE) and AYES standards, the Automotive Technology program provides current curriculum, instructional materials, and equipment that teach knowledge, skills and attitudes appropriate to industry needs.

Students will be required to purchase items for this program at an approximate cost of $200. In partnership with Montgomery County Community College, students can earn college credits for the successful completion of their technical course work completed at NMTCC.

**DIESEL TRUCK TECHNOLOGY 6594D AM / 6694D PM**

As the trucking industry continues to expand, the demand is growing for mechanics and technicians to repair and maintain diesel engines. Upon completion of the Diesel Truck Technology program, students may secure employment as entry-level technicians or advance their education and training. This program follows the ASE/NATEF national standards for Diesel Truck technology. Students will be required to purchase items for this program at an approximate cost of $150.
### RECREATIONAL POWER EQUIPMENT  6594P AM / 6694P PM
From recreational vehicles and equipment such as snowmobiles, jet skis and motorcycles, to lawn and garden equipment, such as mowers and chain saws, small engines power many machines that make our lives easier and more enjoyable. The Recreational and Outdoor Power Equipment program is the study of “how and why” machinery operates along with the “whys” of machinery failure and learning of “how to” diagnose the problems and make proper, efficient repairs. Students will be able to specialize in different areas of repairing and maintaining this equipment. Students will be required to purchase items for this program at an approximate cost of $100.

### WAREHOUSING & LOGISTICS  6594R AM / 6694R PM
The Warehousing & Logistics Program prepares individuals to manage and coordinate logistical functions in an enterprise and to undertake the responsibilities associated with receiving, storing, shipping, controlling and distributing products and materials and the various systems and record keeping pertaining to these operations. Students will be instructed in the use of storage space, inventory control and shipping/receiving practices; equipment such as fork lifts, conveyors, hand trucks, carts and other devices used to transport materials and/or supplies to various destinations; and the various types of packaging techniques necessary for safe transport of goods. Students will be required to purchase items for this program at an approximate cost of $100.

### VISUAL COMMUNICATIONS TECHNOLOGY CLUSTER

#### COMMERCIAL & ADVERTISING ART  6714C AM / 6814C PM
The Commercial & Advertising Art program offers instruction encompassing a broad spectrum of art and design related occupations. Students are introduced to the tools and techniques needed to become successful commercial artists. Growth in illustration, design and other techniques will create a demand for skilled artists far in excess of qualified workers. The core curriculum focuses on two-dimensional design, digital imaging, illustration and the principles of advertising. Hands-on learning will provide students with the background needed to develop a viable portfolio. Students will be required to purchase items for this program at an approximate cost of $125.

#### GRAPHIC ARTS  6714G AM / 6814G PM
The Graphic Arts program offers instruction encompassing a broad spectrum of print-related and quick-copy occupations. The major areas of study in the graphic arts program include design and layout, typography, offset printing operation, bindery, document management/quick-copy center operations and Adobe Creative Cloud. Students will be required to purchase items for this program at an approximate cost of $50.

#### INTERNET TECHNOLOGIES  6714I AM / 6814I PM
The Internet Technologies program is an instructional program that prepares individuals to apply technical skills in support and design of computer systems and networks. The program includes instruction in website design as well as game and simulation development. The program also provides a technical foundation for college-bound students pursuing a career in information technology and provides the training for students to acquire several industry certifications. The course includes the Oracle and Cisco Academies, which provide training in computer networking, database design, computer system support, computer repair and service, and other IT subjects.

### ALLIED HEALTH TECHNOLOGY  [Seniors]  6516 AM
Allied Health Technology is designed for college preparatory students who are interested in pursuing a medical or health science career after high school. The program is unique in that it is based at Abington Lansdale hospital. Students enrolled in this program will report daily to the hospital where they will receive theoretical and technical instruction. In addition, through a bi-weekly schedule of clinical rotations, students will gain practical experience while working beside the individual professionals in their specific departments. The Allied Health Technology program is a great way for students to test their dreams of becoming health care professionals.

This program will take students into major departments of the hospital, such as—Emergency Room, Nursing Care Units, Medical Laboratory, Radiology, Respiratory Care, Pharmacy, Physical Therapy, Intensive Care, and Operating Room.

Criteria for Admission – Students should apply for admission while in 11th grade. GPA attendance, and conduct records, a personal essay and letters of recommendations are primary considerations for acceptance. Performance in an interview will be evaluated as well. Students must have recommendations from a science teacher and their guidance counselor. A physical exam, negative TB skin test, and Hepatitis B vaccination must be obtained prior to entrance into the program. A seasonal flu shot will be required in the fall when the vaccine is available. Students are responsible for providing their own transportation. Students will be required to purchase items for this program at an approximate cost of $150.

### NMTCC School-to-Work Opportunities

#### INTERNSHIP
Internships are designed to allow students the opportunity to understand more fully the technical career, which they have chosen.

Features:
- Short-term career exploration experience.
- Available to students who are in the early stages of technical training.
- Assists in formulating the student’s career plan.
- Open to 11th grade students starting in the second semester, upon recommendation of technical teacher.

#### FULL TIME 10TH GRADE PROGRAM
In the 10th grade program, students do not participate in a paid work experience. However, part of their academic curriculum is a work readiness component.

Features:
- Full time program is offered in all vocational programs at North Montco Technical Career Center.
- Students must be in good academic (grades, attendance and discipline) and technical standing to enroll and continue in the program.
• Academic instruction is delivered at North Montco Technical Career Center in an integrated learning environment.
• Students must complete an application process similar to the Youth Apprenticeship program entrance process.

PENNSYLVANIA YOUTH APPRENTICESHIP PROGRAM (PYAP)
This employer-driven program offers paid, on-the-job training experience through a partnership with a sponsoring company. Employers participate with school staff to develop and monitor the curriculum and standards.

Features:
• Open to 11th and 12th grade students.
• In order to be eligible for PYAP program participation in senior year, students must have achieved “proficiency” in reading, writing and math on the PSSA test administered in the spring of their junior year.
• Students must have successfully completed all major academic subjects during the 10th grade year to enroll in the program.
• Application process requires recommendations from vocational technical teacher, academic teachers from the sending school, guidance counselors, and an interview with the Administrative Director of North Montco Technical Career Center.
• Students and employers sign a training agreement accepting responsibilities of the position.
• Students complete high school and may enter into the following postsecondary programs: adult registered apprenticeship, certificate program or associate technical degree program.
• Academic and technical instruction is delivered at North Montco Technical Career Center in an integrated learning environment as applicable to the youth apprentice’s career plan.

COOPERATIVE EDUCATION PROGRAM (CO-OP)
A culminating Capstone paid work experience for students in the 12th grade who have secured the recommendation of their technical instructor. Recommended students have the opportunity to obtain real work experience and to practice the specific technical skills they have learned.

Features:
• Open to 12th grade students who possess entry-level skills.
• All academics are taken at the sending school during morning periods.
• Students are employed in their technical field in the afternoon.
• Students return to North Montco Technical Career Center once a week to meet with the Co-Op Coordinator to learn employability and workplace related skills and also to meet with the lab instructor to discuss concerns on the job.

Academic Programs
All students who attend NMTCC on a full-time basis take their academics in the context of their career objective. Health and PE are integrated with the vocational curriculum. Resources such as computer interactive instruction and academic support are provided.

GERMAN 101
German 101 (college level) is taught by an instructor from Montgomery County Community College and is available for 11th and 12th graders. Three college credits are awarded upon successful completion of the course. German 101 is a requirement for students wishing to participate in the exchange program.

HEALTH/PHYSICAL EDUCATION CLASSES
Health/Physical Education classes are offered for students who may need these credits and have the approval of the High School principal.

SOAR STUDENTS OCCUPATIONALLY AND ACADEMICALLY READY
A SOAR program is a Pennsylvania Department of Education approved, Career & Technical Education Program that credits skills and tasks learned at high school level to a post-secondary (college) degree, diploma or certificate program. SOAR programs prepare today’s student for tomorrow’s high demand and high wage careers.

To view current advanced credit opportunities articulated with post-secondary institutions, go to Search for Equivalencies under the search button at www.collegetransfer.net, select PA Bureau of Career and Technical Education at the “From” drop down menu.

POST-SECONDARY PARTNERS
NMTCC has articulation agreements with the following post-secondary institutions: Antonelli Institute, Automotive Training Center, Baltimore International College, Bucks County Community College, Gwynedd Mercy University, Harcum College, Johnson & Wales University, Montgomery County Community College, Nashville Auto-Diesel College, Northampton County Community College, Northwestern College, Pennsylvania College of Technology, The Restaurant School at Walnut Hill College, Universal Technical Institute (UTI), and University of North Western Ohio.