

Northern Cambria High School

813 35TH Street

Northern Cambria, PA 15714



Program of Studies

2016-2017

Choosing Your Program of Studies

Your decisions as to which classes and choice of electives you make, should be based upon what is best for you according to the following: the plans you have for your future career or schooling, your interests, your abilities, and your past scholastic accomplishments.

It is best for you to plan not only for the year ahead but also for all the years between now and your graduation. Make a total plan for each of these years, being careful to fit in those courses which will be most beneficial and profitable to you. In all instances, students, regardless of gender, will be assigned to any course they choose as long as they meet the requirements. The guidance department will be willing to help students select a program or elective subject and make any other recommendations to the student. *HOWEVER, IT IS THE **RESPONSIBILITY OF THE STUDENT** TO MAKE THE FINAL SELECTION OF THE TOTAL PROGRAM AND TO SEE THAT THE QUALITY OF HIS/HER WORK IS ACCEPTABLE AND THAT HIS/HER TOTAL CREDITS AND COURSE REQUIREMENTS MEET THE TOTAL REQUIREMENTS FOR GRADUATION.*

Graduation Requirements

- * Students in grades 11 and 12, during the 2016-2017 school year will be required to pass a total of 22 credits.**
- * Students in the class of 2019-2020 must score proficient on Keystone Exams or any other requirements as set by PDE.**
- * Students in the class of 2019 and all subsequent years following will be required to pass a total of 24.5 credits.**

Credits must be earned in the following areas:

COURSE	CREDITS	CREDITS
	Class of 2017 & 2018	Class of 2019
English	4	4
Social Studies	3	3.5
Mathematics	3	4
Science	3	3.5
Computers	2	2
Health	.2	.2
Physical Education	1 (.2 per yr)	1 (.2 per year)
Arts and Humanities	6+ (Electives)	6.5

***Students in grades 11 and 12, during the 2016-2017 school year will be required to pass a total of 22 credits.**

Promotion Requirements

A student's standing as a sophomore, junior or senior depends upon the credits accumulated. A student must meet the minimum requirements to be promoted:

Promotion to 10th grade – 5 credits

Promotion to 11th grade – 10 credits

Promotion to 12th grade – 16 credits

All arrangements for summer classes in schools outside this school district must be approved in advance by the administration.

Curriculum Offerings

Academic

For many of our students, data, classwork, and teacher input will be used pertaining to the selection of classes in the subject areas of math, science and literature. While much thought and consideration will be involved in this procedure, parents will still have the availability to discuss these selections with the high school principal and guidance counselor.

Vocational Curriculum

Grade 10 (Cosmetology only) and grade 11 and 12

Students will spend one-half day at Admiral Peary Area Vocational-Technical School and the other half day at their home school district where they receive the required subjects that are necessary for graduation. At Admiral Peary, students have the opportunity to become proficient in one area of vocational education. Admiral offers seventeen programs of study. Students applying are evaluated at Admiral Peary by the guidance department on interest, abilities, and learning styles prior to entering. Placement in Admiral Peary programs is based on quotas. Test results, along with student's interest, are used to determine appropriate program placement.

Registration and Withdrawal

A student who has attained the age of 17 must register and begin attending high school classes by the second week of school. If the student has not entered as of this time he/she shall not be permitted to enter school until the following year. Once a student has withdrawn from school, he or she may not reenter during the same school year, but will be considered for re-admittance at the beginning of the next school year.

Registration and Guidelines and Deadlines

Each student will register for next year's classes through the student portal of our Sapphire computer system. For all students, data will be used in the subjects of science, math, and Literature to ensure proper course placement. A parent permission slip will be needed for any student wishing to change from the recommended course.

Students will be informed prior to the end of this school year of the cut-off date for making any changes to schedules, or will be contacted by a Global Connect phone call during early summer. **NO SCHEDULE CHANGES WILL BE PERMITTED AFTER THIS DATE.**

Weighted Grades

Northern Cambria has three levels of grades: the actual grade, level 2, and level 1. Level 2 is 1.03 times the actual grade and amounts to approximately 3 percentage points being added to the actual grade. Level 1 is 1.06 times the actual grade and amounts to approximately 5 percentage points being added to the actual grad.

Level 1 Classes include: AP English 12, Calculus, Biology II, Chemistry II, and Physics.

Level 2 classes include: Honors English 11, Trigonometry, Honors World History, Anatomy/Physiology, Advanced CADD, French IV, and Spanish IV.

College in High School Courses

Northern Cambria High School offers the following dual enrollment courses for the upcoming 2016-2017 school year. The program allows high school students to earn college credits while taking approved courses in high school. The following courses have been approved for dual enrollment through these three post-secondary schools:

Mount Aloysius College Dual Enrollment Classes:

Classes include: Chem. II – 4 credits, Anatomy – 4 credits, AP English 12 – 3 credit

Penn Highlands Dual Enrollment Classes:

Classes include: Psychology – 3 credits, Honors World History – 3 credits, & Contemporary Issues – 3 credits, Public Speaking – 3 credits.

St. Francis University Dual Enrollment Classes:

Classes include: Spanish IV – 3 credits, Physics – 4 credits, Calculus – 3 credits, Economics – 3 credits.

**** Students should see the teacher and guidance counselor regarding the necessary paperwork completion and fee for each of these courses at the beginning of the course.**

Grade 9 Required Courses of Study

Required courses:

English 9, Honors English 9 (teacher recommendation)
U.S. Cultures I
Academic Biology, Biology
Keystone Science 9 (1 Semester)
ELO (1 Semester)
Algebra I, Plane Geometry , Algebra 1 A.
Computer Technology, Web Design, Intro to Computer Applications Design, CADD/ADV. CADD
Physical Education
Health 9

Electives

Geography
Band (must plan an instrument)
Chorus (prerequisite: 8th grade chorus audition)
Family/Consumer Ed.
Nutrition
Teen Life
Pre-Engineering Manufacturing & Construction (CLASSES LINKED TOGETHER)
Foundations of Technology
Art I
Intro to Business
CADD/ADV. CADD
Spanish 1 *
French 1 *
Web Page Design
Computer Technology
Intro to Computer Applications

*Most colleges REQUIRE at least 2 years of a foreign language which can be taken at any point in your high school career.

If you need to schedule either Band or Chorus for your 9th grade year, you then do not have to schedule a computer class. Remember, you need 2 credits in computers to meet graduation requirements.

Students will choose one elective and three alternates for scheduling purposes.

Grade 10 Required Courses of Study

Required courses:

English 10, Honors English 10 (teacher recommendation)

U.S. Cultures II

Plane Geometry, Algebra II, Algebra 1 B

Academic Chemistry or Chemistry

Physical Education

French II or Spanish II (These courses are for students who have previously taken and passed French I or Spanish I).

Electives

Electives

Intro to Computer Applications Design

Computer Technology

Web Design

Multimedia Design

Computer Programming

Intro to Business

Accounting I

Pre-Engineering Manufacturing & Construction

Wood Construction Engineering

Foundations of Technology

Manufacturing Engineering (Manufacturing Tech II)

ADV. CADD

3D Architectural CADD Engineering

3D Mechanical CADD Engineering

CADD/ADV. CADD

Family and Consumer Science

Nutrition

Wood Const. Engineering

Wood Const. Engineering II & III

Art I

Art II

French I, French II *

Spanish I, Spanish II*

Geography

Band

Chorus

Journalism

Publishing/Yearbook

Public Speaking & Research Writing

(Both courses are linked together)

Creative Writing (Semester Only)

SAT Prep (Semester Only)

Vo-Tech (Cosmo. Only)

Teen Life

** French II or Spanish II (These courses are **REQUIRED** for students planning to go to college and should be taken immediately following French/Spanish I)

Students will pick two electives and three alternates.

Grade 11 Required Courses of Study

Required courses:

English 11 or Honors English 11 (teacher recommendation)
 World Cultures or Honors World History (teacher recommendation)
 Algebra II, Trigonometry/Statistics, Integrated Math, Plane Geometry
 Chemistry II/Biology II/Physics, Chemistry, Environmental Awareness, Physical Science, Anatomy
 Physical Education

Electives **Electives *Students will select three electives and three alternates**

Computer Technology	French I
Web Page Design	French II *
Multimedia Design	French III
Computer Programming	Spanish I
Intro to Business	Spanish II*
Accounting I	Spanish III
Accounting II	Geography
Multi Media Design II (1)	Contemporary issues
Pre-Engineering Manufacturing & Construction	POD/Applied Economics
Foundations of Technology	Psychology
Wood Construction Engineering	Global Science
Wood Construction Engineering II	Chemistry II
Wood Construction Engineering III	Biology
Manufacturing Engineering	Global Science
CADD/ADV. CADD	Intro. To Marine Biology
ADV.CADD	Personal Finance (P.G or Alg. 1B)
3D Architectural Engineering	Band
3D Mechanical Engineering	Human Development
Physics (Enrolled in Trig. or Calc.)	Chorus
Automation Programming and Engineering	Journalism
Family and Consumer Science	Yearbook
Nutrition	Economics
Art 1	Creative Writing
Art II	Research Writing/Public Speaking
Art III	Vo-Tech

*** French II or Spanish II (These courses are **REQUIRED** for students planning to go to college and should be taken immediately following French/Spanish I)

1. A Pre-requisite of a “B” grade in Web Page Design and Multi-Media Design plus teacher recommendation.

Grade 12

Required Courses of Study

Required Courses:

English 12 or AP English (teacher recommendation)

Physical Education

Math or Science (choose from elective list)

Two of the following additional classes: Social St., Math, Science, Foreign Language, Computers or Business

Electives *Students will select three electives and three alternates

Computer Technology

Web Page Design

Multimedia Design

Multimedia Design II (1)

Computer Programming

Intro to Business

Accounting I

Accounting II

Pre-Engineering Manufacturing & Construction

Wood Construction Engineering

Wood Construction Engineering II

Wood Construction Engineering III

Foundations Of Technology

Manufacturing Engineering

ADV. CADD

3D Architectural CADD Engineering

3D Mechanical CADD Engineering

CADD/ADV. CADD

Automation Programming and Engineering

Family and Consumer Science

Nutrition

Art I

Art II

Art III

French I

Honors World History

Calculus

Trig/Stats

Integrated Math

Vo-Tech

French II*

French III

French IV

Spanish I

Spanish II*

Spanish III

Spanish IV

Geography

Contemporary issues

POD/Applied Economics

Psychology

Economics

Chemistry II

Biology II

Anatomy/Physiology

Global Science

Intro To Marine Biology

Human Development

Physics (**Must be enrolled in Trig or Calc.**)

Personal Finance (Alg. 1B or P.G)

Band

Chorus

Journalism

Yearbook

Intro. To Marine Biology

Physical Science

Creative Writing

Research Writing/Public Speaking

P.O.D - (Semester – Class of 2019)

*** French II or Spanish II (These courses are **REQUIRED** for students planning to go to college and should be taken immediately following French/Spanish I)

(1) A pre-requisite of a “B” grade in Web Page Design and Multi-media Design plus teacher recommendation. *Students will select two electives and two alternates.

Vocational Curriculum Grade 10 (Cosmetology Only)

<u>REQUIRED COURSES</u>	<u>CREDIT</u>
	<u>GRADE 10</u>
English 10	1
Physical Education	0.25
Math	1
Biology/ Chemistry	1
Vo- Tech	3
	6.25
	 <u>GRADE 11</u>
English 11	1
Physical Education	0.25
Math	1
Social Studies or Science	1
Vo- Tech	3
	6.25
	 <u>GRADE 12</u>
English 12	1
Physical Education	0.25
Science or Social studies	1
1 additional class (Math, Science, Social St., or Computer)	1
Vo- Tech	3
	6.25

***Adjustment in credits will be made for the class of 2019.**

English

Honors English 9

Prerequisite: Honors enrollment is based on the three criteria: skills assessment, teacher recommendations, and Classroom performances.

Purpose: This course is designed for the serious student who desires a more challenging, in-depth study as a Preparation for a college career.

Description: This course covers the same concepts as English 9 but in greater depth and at a quicker pace. The Honors English 9 curriculum intensifies the study by examining multiple examples of each genre as well as providing more independent learning opportunities to produce identified outcomes. Then, students will refine their writing skills, practicing standard/formal conventions, by producing compositions and personal writings as a means to both learn and communicate what has been learned. Students will be exposed to SAT based vocabulary that they will learn and apply by completing assigned packets of activities and tests.

Requirements: Grades will be assigned based on daily activities, homework, projects, quizzes, essays, and tests. There is a mid-term exam as well as a final exam that combined will be worth 20% of the student's grade.

English 9

Students gain proficiency in varied forms of writing, reading, speaking, listening, and thinking. Main units which incorporate us of a textbook are fiction, nonfiction, poetry, drama, and research. Students design creative projects and compile their writing into individualized portfolios. Students, individually and in groups, present speeches and other work to the class. Grammar, mechanics, spelling, usage and sentence formation are practiced and reviewed. Students organize and maintain a notebook of the class syllabus and classroom rules, vocabulary words, literary terms, notes, handouts, and graded work. Students will participate in independent read of assigned and choice novels. Library orientation and instruction occur periodically throughout the year.

Honors English 10

Prerequisite: To continue in the honors program a student is required to successfully complete Honors English 9 with a grade of "B" or higher and a minimum of a "B" on the final exam. To transfer into the honors program, a student must attain an "A" in English 9 as the final grade, a 91% or higher on the final exam, and the recommendation of the English 9 teacher.

Purpose: This course is designed for the serious student who desires a more challenging, in-depth study as a Preparation for a college career.

Description: This course covers the same concepts as English 10 but in greater depth and at a quicker pace. Honors 10 focuses on the study of the elements of literature and the understanding and Identification of literary devices and terminology. This curriculum intensifies the study by examining

multiple examples of each genre as well as giving the students opportunities to work independently to produce identified outcomes. Utilizing literature selections as the focus, students will refine their Writing skills, practicing standard/formal conventions, by producing compositions and personal Writings as a means to both learn and communicate what has been learned. Students will be exposed to SAT based vocabulary that they will learn and apply by compensating assigned packets of activities and tests.

Requirements: Grades will be assigned based on the daily activities, homework, projects, quizzes, essays, and Tests. There is a mid-term exam as well as a final exam that combined will be worth 20% of the student's grade. Students are required to take the Literature Keystone exam.

English 10

Students improve reading, writing and oral communication skills through literature based, whole language activities. Literary interpretations will focus on critical thinking, attentive listening, and correct, accurate expression of ideas. Students will use self-evaluation and editing skills to improve organization, usage, spelling, and vocabulary in producing examples of expository, persuasive, and creative writing for their portfolios. Students will continue to learn and apply the aspects of research writing. English 10 will continue students' in depth study of the structures and characteristics of fiction, nonfiction, poetry, and drama. Students organize and maintain a notebook of the class syllabus and classroom rules, vocabulary words, literary terms, notes, handout, and graded work.

English 11

Students read world literature including Greek, Roman, Middle Eastern, Asian, and African literature for appreciative understanding of diverse cultures, for study of literary types and devices, and for speech and writing topics. Students speak individually and in several group formats. They write papers of various lengths and types including poetry, journal entries, essays, responses to reading, and research papers emphasizing critical thinking, sentence structure, and usage. A career education unit teaches college and career search strategies.

English 12

Students improve communication skills through writing, reading, speaking, and listening activities. The course centers on the study of American Literature, including fiction, nonfiction, poetry, and drama. Students read, discuss, and analyze a variety of Literature and study related vocabulary. Students write several compositions based on their readings and complete a job search portfolio that includes a cover letter and resume. Students improve their research skills by writing two well-documented reports, and students present their research findings to the class. Throughout the year, English 12 students participate in independent reading of assigned and choice novels and must maintain an organized binder.

Honors English 11

This World-literature based composition course is designed for juniors ready to undertake an advanced level of literary analysis. The course prepares for college level reading and writing. Students read challenging selections from World literature including British literature. They analyze themes and techniques, write papers of synthesis and other papers, and present projects. Honors English replaces English 11 for students who have maintained a 2.75 or better average in English 9 and 10, have the signature of an English teacher, and complete required summer reading. Students considering the option of Advanced Placement English in grade 12 are advised to request Honors English 11

Advanced Placement English 12

Advances Placement English Literature and Composition replaces English 12 for qualified students ready for college level work. Students who enroll in this course are eligible to take the AP Exam in May and earn college credits for this work. This course is also approved for dual enrollment through Mount Aloysius, which gives AP students another option for earning college credit. Course studies include literary traditions, critical perspectives, and analysis of stories, novels, poems, and plays. Procedures include oral presentations, written responses to literary selections, team activities, and research projects. Students work to master literary terminology and understand its application to various works of literature. The completion of a summer reading assignment is required for all students planning to take this AP course.

Creative Writing - Semester

A multi-genre introduction to the craft of creative writing. In the context of a variety of genres, students will examine literary conventions as well as the writing techniques and tools essential to effective writing and editing.

Research - Semester

Using technology and print resources, students in this course will explore a variety of relevant topics and present their findings in several different formats, including written, spoken, and computer-generated. Students will recognize the value of research in their daily lives as well as in the academic world, and they will learn to locate and evaluate the reliability of the information available. Following the research process, students will gain reading, writing, speaking, listening, and research skills to improve their current and future academic success. In this course, students will use computers and other technology, learn how to assess sources, conduct a formal survey and calculate the results, and present ideas and information in an appealing, informative, and accurate form to an audience. In addition, students will use available online research sites. Students who take this course should have basic computer skills, be able to work independently as well as cooperatively, and possess a desire to improve a variety of academic skills.

SOCIAL STUDIES

U.S. Cultures I

U.S. Cultures I is designed to enable our student body to understand the society of the past and to increase their mastery over the society of the present. Students learn skills on note taking, public speaking, reading, research skills, and writing skills. The students will learn to develop within understanding of America life and its multicultural society from the Civil War to the Roaring 20's.

U.S. Cultures II

U.S. Cultures II pertains to the study of American history from the Great Depression period to the present. Students will be exposed to the historical, geographic, political, economic, and sociological events which influenced the development of the United States and the resulting impact on world history. The standards for this course relate to the history of the United States from the Great Depression era to the present. Students should continue to learn fundamental concepts in civics, economics, and geography within the context of United States history.

World Cultures

Students will examine the development of man's culture from prehistoric times to the 20th century. Students will also be exposed to basic terminology and principles related to the study of culture. The focus of study will be man's relationship to his fellow man and his environment. Special attention will be given to time, places, geography, and individuals as factors influencing man's experience.

Honors World History

This course is designed to provide an in-depth background in world history for students who plan to go into related areas of study and/or work after high school. Honors World History will enhance the understanding of world literature, languages, and international relations.

Problems of Democracy/ Applied Economics

This course will provide students with the opportunity to study a wide variety of topics they will confront as responsible citizens and adults. Among the topics studied are: money and banking, checking accounts, credit card and the Stock Market. Students will also study voting and election, political parties, the U.S. Constitution, Criminal and Civil Law, plus current events.

Contemporary Issues

This course develops those understandings and skills that are necessary for citizens to exert an influence on the American political and economic systems. This course will be an issues-centered course where students will be able to analyze current domestic and foreign issues through a reflective thinking process. Identifying issues, points of view, arguments, evidence, and sources are part of this process. Students will be able to analyze these issues through the concepts of the various social studies disciplines (anthropology, archeology, economics, and sociology). Critical thinking skills problem solving techniques and approaches to conflict resolution will also be applied to this course.

Student assessment will be based on participation in classroom discussions and different written exams/projects.

Psychology

According to the American Psychological Association "Psychology is the science and profession concerned with the behavior of humans and animals." This issue centered course will develop those understandings that are necessary for citizens to exert an influence on their lives from psychological perspective. Course objectives would include studying the core concepts and theories of psychology; learning the basic skills of psychological research: applying psychological concepts to life; developing critical thinking skills; building reading, writing, and discussion skills; and learning about ethical standards. Student assessment will be based on participation in classroom discussion, written exams, writing position papers and developing special projects.

Geography

Geography is the study of the world's peoples, places, and environments, with a focus on world regions. The Geography course is designed to provide the students an effective tool for learning about our world. It will cover basic geography of the U.S.A. and Canada, Pennsylvania Geography, and will also focus on world regions. Geography is designed to develop within the students the fundamentals of geography and the understanding of their environment and the people within their society.

Economics

This course is aimed to prepare college bound students for their studies in Economics. This course will be a yearlong class that will consist of two main parts, focusing on Macroeconomics and Microeconomics. The students will learn the basic concepts of Supply and Demand, and use these concepts to delve deeper into the economies of our world, country, and town. Economics will be a dual enrolment class that will be offered for college credit. Being that credit is offered, it is a high level class that is aimed to students who will be attending postsecondary education in the field of business, accounting, economics, or political science. This will count towards the student's Social Studies requirement for graduation

MATHEMATICS

Algebra 1 – Part A

This course is the first in a sequence of two that are going to ensure the students understanding of the basic ideas and concepts of Algebra. It consistently applies and connects algebra principles to other areas of mathematics, other disciplines and real-life applications. Students will understand and use the basic ideas of algebra including: Algebraic Expressions, Rational Numbers, Solve Equations, Applications Numbers, Functions and Graphs.

Algebra 1 – Part B

This course is the second in a sequence of two that are going to ensure the students understanding of the basic ideas and concepts of Algebra. It consistently applies and connects algebra principles to other areas of mathematics, other disciplines and real-life applications. Students will continue to learn Algebra 1 concepts including: Inequalities, Polynomials, Factoring, and Rational Expressions.

Integrated Math

Integrated Mathematics is a course that builds on the mathematical topics and problem solving techniques students already have. It has been designed to prepare you for success in college, in careers, and in daily life in the 21st century. It helps you develop the ability to explore and solve mathematical problems, think critically, work cooperatively with others, and communicate ideas clearly.

The mathematical topics in this course are integrated. This course teaches the essential topics in the Algebra 1/Geometry/Algebra 2 sequence, plus many other interesting, contemporary topics. The topics such as Measurement, Statistics, Probability, Logical Reasoning, Discrete Mathematics, and Functions are spiraled throughout the course so that you continually build on what you have learned.

Integrated Mathematics develops a clear understanding of topics and strong problem solving skills by helping you get actively involved in learning, study meaningful mathematics, see connections among different branches of mathematics, solve real-world applications and long-term projects, and use calculators and computers.

Algebra I

This course is an introduction to the basic ideas and concepts of algebra. Algebra I is the study of operations and relations among numbers through the use of variables instead of using just constants. These symbols vastly increase the scope of arithmetic. It consistently applies and connects algebra principles to other areas of math, other disciplines, and real-life applications. Students will understand and use the basic ideas of Algebra including: Algebraic Expressions, Rational Numbers, Solve Equations, applications of Rational Numbers, Functions and Graphs, Inequalities, Polynomials, Factoring, and Rational Expressions.

Algebra II

Algebra II will cover the main ideas from First Degree Equations and Inequalities, to Polynomial and Radical Equations and Inequalities, to advanced functions and Relations and lastly Discrete Mathematics. Like any mathematics course each new topic studied hinges on something learned in a previous unit. The material covered is based on the eligible content of the Keystone Exams. This course will apply and connect algebra principles to real-life applications and implement graphing calculators to reinforce certain topics.

Plane Geometry

This course provides experiences in problem solving with reference to geometric theory and application. Students will analyze characteristics and properties of two- and three- dimensional geometric shapes and develop mathematical arguments about geometric relationships. This includes an introduction to formal/informal proof and deductive/inductive reasoning. The course also includes the study of the relationships of Lines and Angles, Triangles, Quadrilaterals, Circles, as well as their area, surface area, and volume. Students will also gain an introduction to Trigonometry. Students will be expected to become proficient in the use of a protractor and compass.

Trigonometry/ Statistics

This course begins with a basic review of the Algebra II concepts. Graphing calculators will be integrated into this portion of the course. The review section leads us to the introduction of the trig functions. Right triangle theory along with the six circular functions will be explored in detail. Graphs, identities, manipulations, and current applications of these concepts will be explored throughout the course.

The class will then introduce students to the basic terminology and techniques of statistics and probability.

Students will be required to collect, organize, and analyze different types of data. Applications of these techniques will include problems from agriculture, biology, business, economics, education, psychology, and engineering. Several hands on activities will be incorporated throughout the year to help the students understand and apply the concepts with “real data”.

Calculus

This course is an introduction to the basic premises of calculus. It contains detailed work on representing functions with graphs, formulas, tables and verbal descriptions. Then it explores the many types of functions including linear, polynomial, exponential, logarithmic, trigonometric and their inverses. Next will be work related to the concept of a limit. Evaluating limits both numerically and graphically will then be explored. A general treatment of derivatives and their applications forms the body of the course. These concepts will start with investigations of tangent lines, then move into techniques involving computation of derivatives and end with applications of derivatives including related rates. Investigation of integrals will follow if time permits.

Personal Finance - (11th & 12th Grade Only)

Personal Finance is a course designed to incorporate mathematics into everyday living. Topics covered throughout the year are borrowing, budgeting, buying, inflation and depreciation, insurance, investment, savings, statistics, stocks and taxes. Students will utilize a variety of technologies to enhance their financial decisions.

Prerequisites include: Algebra 1, Geometry, and Algebra 1 B.

Computers/Business Education

Introduction to Computer Applications Design

Provides students with experiences in web development, Internet Technology, computer graphics, digital media and entertainment production, and project management. Students develop skills in photo/video imagery, animation, non-linear video editing.

Requirement: By Permission Only

Computer Technology

This course provides the student with the ability to understand the nature of computer hardware, how it is manufactured, how to maintain and service a computer, how to load and work with operating systems, how to load and maintain local and network applications and how to set up and administer a small local network.

Web Page Design

Students will use basic Hypertext Markup Language (HTML) to begin the course and progress to a web page editor such as Dreamweaver. During this course students will acquire knowledge about how the web works and create web pages/sites of their own. Students will evaluate other web pages/sites as well as do some work with networking and telecommunications.

Multimedia Design

In this course, students will learn how to produce, design, and utilize digital media. They will learn a broad range of skills and concepts and through hands-on activities, students will learn techniques for producing and distributing digital images, audio, video, and Web sites.

Requirement of "C" or better in Web Design, or Computer Technology for enrollment.

Multimedia Design II

In this course, students will learn advanced techniques in production, design, and utilization of digital media. Students will learn a broad range of skills and concepts. Through hands-on activities, students will learn techniques for producing and distributing digital images, audio, video, programming, and website development. This course is designed for self-motivated individuals who can remain on task for extended project based assignments.

Requirement of "B" or better in Web Design and Multimedia Design for enrollment; also Teacher Recommendation.

Computer Programming

This course is designed to provide students with a better understanding of structured programming. Prior knowledge of programming language is not necessary. This class will introduce Visual Basic.

Requirement of "C" or better in Plane Geometry and a "C" or better in another Computer Applications Course Level II or above for enrollment.

Intro to Business

This course prepares the student for their economic roles of being a consumer, worker and citizen while introducing business activities that will serve as a background for other business courses in high school or college. Areas of study include Economics, Business Activities, Technology Applications, Career Development, and Consumer Education. This course will assist students with consumer decision making, preparation for future employment, and performing their responsibilities as a citizen.

Accounting I

This course is recommended to all students, especially those planning to further their education in any area of business or a four-year business administration degree. Accounting I exposes students to the fundamentals of accounting using the principles of double-entry accounting, transaction analysis, journal entries, ledger entries, and the preparation for financial reports for different types of businesses.

Accounting II

Accounting II expands upon the accounting principles learned in Accounting I. This course will enable students to identify and complete all the major accounting forms normally used in sole proprietorships, partnerships, and corporations with emphasis on end-of-fiscal period's entries and reports. The student will also be required to identify and complete the correct accounting forms used in recording transactions during the fiscal periods.

Requirement of "C" or better in Accounting I

Science

Academic Biology 1/ Biology 1

Biology is a science course that exposes the student to the unifying characteristics of living forms and progresses to the diversity of life. Diversity begins with the simplest organisms and works toward the complex ecosystems. The students are lead through a planned course of study designed to make them more aware of themselves as functioning organisms, as well as, identifying other living organisms and their methods of survival. Many branches of biology are included in this course. Those areas which comprise most of the course content include: Scientific Research, Biochemistry, Cell Structure and Organization, Cell Growth and Reproduction, Genetics, Heredity Homeostasis and Transport, Evolution, and Ecology.

Biology II

This course includes a more detailed study of selected topics from Biology I. General topics include the origin of life, the chemical basis of life and the process of life. Detailed topics include the study of cells, genetics, microbiology, evolution, anatomy, and physiology. Laboratory exercises provide opportunities for practical application of the content, learning scientific methods and the introduction of additional topics. Comprehensive vertebrate dissection occurs during the eight weeks of this course.

Introduction to Marine Biology

This course is designed to study marine ecosystems along with the physical relationships between organisms and their surroundings. Students will study various ecosystems which exist in the marine environment including intertidal zones, brackish water, coral reefs, open-ocean, and the continental shelf. Students will study organism relationships, such as: Mutualism, Commensalism, and Parasitism.

Environmental Science

This course will allow the students to identify relationships between organisms found in nature. Two main topics will be discussed: Ecology and Evolution. When discussing Ecology we will cover the topics: Ecosystems and Biomes, Energy Flow within the Ecosystems, Organism Interactions, Population Dynamics, Earth's Cycles and Environmental Changes. When discussing Evolution we will include the Theory of Evolution, the Mechanisms of Evolution, and Scientific Terminology.

Environmental Awareness

This course deals with the basic concepts necessary for understanding man's place in the global ecosystem. It deals with such topics as water, energy and basic resource management-particularly the role each individual can play in the process. Also covered are current environmental problems and possible solutions to these problems.

Physical Science

The focus of this course is to provide the student with information on a wide variety of NON-Life science issues. Topics include Newton's Laws of Motion with emphasis on a NON- Mathematical description of forces, motion and gravity; the Quantum Theory describing the inner workings of the atom; Einstein's famous Theory of Relativity and how It has completely change how we view the universe as well as space related topics such as the creation of the universe and the Big Bang Theory. Also covered as time allows are a brief history of scientific thought and advances in technology; radiation and radioactivity, as well as the basics of electricity. All topics are covered in a descriptive, non – mathematical fashion (other than a unit on the SI- Metric system). Hands on activities are included as equipment and time allow.

Global Science

This course is designed for any college prep student whether they are science oriented or non-science oriented. It details the earth's ecological systems and man's interdependence with them. The content includes the application of critical thinking to resolve environmental problems. One expected student outcome will be describing and ecosystem model and planning a project, which demonstrates stewardship for the selected ecosystem. **Students who have taken Environmental Awareness are ineligible for this course.**

Physics - Pre-Requisite (Must be enrolled in Trig. or Calc.)

The purpose of the course is to help students learn analytical thought processes, prepare for college, and understand science and technology in our everyday world. Four major disciplines will be covered: mechanics, wave motion, thermodynamics, and electricity and magnetism. A laboratory using scientific apparatus will supplement comprehension in a variety of concepts within the four disciplines and applying concepts learned in the classroom.

Chemistry

This course covers a wide variety of basic chemical concepts including structure of matter, changes in matter, and the periodic table, writing and balancing chemical equations, the mole concept and writing chemical formulas. Emphasis is placed on the relevance of these topics as they relate to real world situations including water treatment, food additives, toxic chemicals in the environment and the basic use and danger of common household chemicals. Lab activities are used to illustrate many of these concepts.

Academic Chemistry

This course is designed for the academic, college-bound student. This course will prepare students with the basic knowledge of chemistry needed for more advanced science classes. The course develops problem-solving skills related to atomic theory, periodic properties, atomic structure, quantum theory, chemical bonding and stoichiometry. This course also introduces basic skills and techniques used in a chemistry laboratory. Prerequisite and/or concurrent: Algebra I.

Chemistry II

This course is designed to introduce the academically oriented student to college type lecture-lab classes. It will further develop some of the concepts presented in chemistry I and will also introduce new subject areas including gas laws, organic chemistry, and acid/base chemistry. The emphasis is on problem solving and will include a variety of laboratory exercises from various areas of chemistry. **It is strongly recommended that students applying for Chem. II have at least an 80% in Chem. I.**

Anatomy/ Physiology

This course is tailored to students that are seeking careers in the health sciences. The course includes a detailed study of the following major systems: Integumentary, Skeletal, Muscular, Nervous, Endocrine, Cardiovascular, Lymphatic, Respiratory, Digestive, Urinary, and Reproductive. Laboratory experiences that include comprehensive vertebrate dissection are incorporated during the regular class period.

Practical Anatomy

This course will provide students with the opportunity to investigate the design and function of human anatomy. Each unit will include a specific human system which will be studied from the level of the system, its organs, tissues, and cells. The interworking's of each system which will then be investigated in a study of the human body as a whole. Students will do hands on activities including microscopic examination of tissues and cells, dissection of lower vertebrates, examination of anatomical models, and investigation in human physiology. This course will be beneficial to individuals who have an interest in any area of health or medicine.

Foreign Language

French I

French I is designed for the beginning French student to introduce the student to the basic sound system of the French language. It is integrated with various listening, speaking, reading and writing activities. Students are also exposed to certain aspects of French culture with each chapter covered throughout this first year course. The final exam is cumulative for the course and there are no exemptions.

French II

A final grade in French I of at least 75% is recommended before students advance to the second level. French II stresses the mastery of the first year French and is intended to reinforce and advance the French language communication skills both spoken and written. More difficult vocabulary and language structure is presented. Students are exposed to more cultural situations with each chapter covered. No exemptions are made for the final exam which is cumulative for material covered in levels I—II.

French III

A final grade in French II of at least 75% is recommended before students advance to the third level. French III is designed to further enhance spoken and written communication skills. Emphasis is placed on expansion of vocabulary and comprehension of more difficult grammatical structures. In addition to the cultural readings, history lessons of France are incorporated. No exemptions are made for the final exam which is cumulative for material covered in levels I—III.

French IV

A final grade in French III of at least 75% is recommended before students advance to the fourth level. French IV is designed for those students who wish to increase their overall knowledge of the French language. Students will be exposed to all verb tenses within the language. Material from levels I—III is reviewed while more advanced vocabulary and grammatical structures are covered. In addition to the cultural readings, history lessons of France are incorporated. No exemptions are made for the final exam which is cumulative for material covered in levels I—III. This course is a *level II* weighted course. Level II is 1.03 times the actual grade and amounts to approximately 3 percentage points being added to the actual grade.

Spanish I

Spanish I is designed for the beginning Spanish student to introduce the student to the basic sound system of the Spanish language. Students will start with the very basics like the alphabet and will move forward through the integration of various listening, speaking, reading and writing activities. Students will also be exposed to certain aspects of the Hispanic culture with each chapter throughout this first year course. The Final Exam is cumulative for the course.

Spanish II

Spanish II stresses the mastery of first year Spanish and is intended to reinforce and advance the Spanish language skills in both written and spoken communication. A solid “C” average in Spanish I is recommended before advancing to level II. More difficult vocabulary and grammatical structures are presented in this course. Students will learn the Preterite tense in addition to the Present Tense. The expansion of knowledge of the Hispanic culture will continue to grow with each of the Chapters covered this year. Final Exemptions are given based on the criteria of the Northern Cambria School District. The Final Exam is cumulative for material covered in levels I- II.

Spanish III

Spanish III is designed to further enhance spoken and written communication skills. Emphasis is placed on the expansion of more difficult vocabulary and the comprehension of more difficult grammatical structures. This course is designed to make students become more proficient in writing. Students will be expected to write essays based on course content and language structure learned in levels I-III. A solid “C” average in Spanish II is recommended before advancing to this level. Final Exemptions are granted in conjunction with the Northern Cambria School District Policy. The Final Exam is cumulative for material covered in levels I-III.

Spanish IV

Spanish IV is designed for those students who wish to enhance their proficiency in their overall knowledge of the Spanish language and the Customs and Culture of the Hispanic people. Students will further be exposed to many more verb tenses and themed vocabulary thus enhancing their communication skills. Students will specifically increase their speaking proficiency through various interviews and conversations that will take place throughout the year using all levels of vocabulary. Students taking this course may receive college credits through Saint Francis University. This class is also a Level II weighted course. A solid foundation in levels I-III is recommended before advancing to this level. Final Exemptions are granted in conjunction with the Northern Cambria School District Policy. The Final Exam is cumulative for material covered in levels I-IV

Practical Arts

Computer Aided Drafting and Design (CADD) Engineering

This course provides experiences in S.T.E.M. (Science Technology Engineering Mathematics) problem solving with reference to Electronic drafting. Special emphasis is placed on understanding and usage of computer commands by completing various CADD assignments and problem sheets. The American National Standards Institute {ANSI} drawing regulations, manufacturing processes, conventional drawing representation, line weight, neatness, accuracy and speed will be emphasized. Some specialized drawing templates will be created electronically to speed drawing activities to develop working drawings. The utilization of the most current CADD program – AutoCAD 20xx, will be extensively used. All aspects of electronic drawing methods including basic computer components, simple and complex drawing commands will be reviewed and utilized. This “building block” instructional technique will master the electronic media. -- "YOU'LL BE AMAZED!!" Anyone interested in a career in Engineering, Construction, Machining, Design, Manufacturing and Mechanics should consider this class.

3D Architecture CADD Engineering

This course provides experiences in S.T.E.M. (Science Technology Engineering Mathematics) for an introductory course in architectural design. The course reviews design process and principles, thumbnail sketching, building construction, and structural mechanics (HVAC). Students will create the required construction Document drawings to build a residential and commercial structure. Students will be using Autodesk REVIT Building Information 3D Modeling program (BIM) to develop and render models of the structures. Visualization software may also be used to create a virtual walkthrough using Autodesk 3D Studio Max; an animation program. PREREQUISITE: CADD Engineering Anyone interested in a career in Architectural Engineering, Structural Engineering, Building Construction, And Interior Design, should consider this class.

3D Mechanical CADD Engineering

This course provides experiences in S.T.E.M. (Science Technology Engineering Mathematics) problem solving for an introductory course in 3D modeling. Students will create 3D models of various Mechanical engineering parts, sheet metal stretch outs, and weldments. The enhanced features of this modeling system are quite different from the line construction using CADD. The creation of a 3D solid model will enable the operator to generate specific views to create the necessary working drawings. From the various parts that have been generated an animation will be created to show the assembly of these parts. The Parametric software Autodesk INVENTOR will be used.

Prerequisite: CADD Engineering

Anyone interested in a career in Mechanical Engineering, Machining, Design, Manufacturing and Mechanics should consider this class.

Pre-Engineering

Manufacturing - Semester

This course provides experiences in S.T.E.M. (Science Technology Engineering Mathematics) problem solving for metal technology that meets for half of the year. Instruction is provided in sheet metal fabrication, oxyacetylene welding brazing-cutting & electric arc welding (SMA). An emphasis is placed on the selection, safe use and care of metal working hand and machine tools as well as technical processes needed to perform problem solving activities. The foundation of basic manufacturing production methods will be discussed and utilized to design, produce, test ENGINEER & analyze various transportation technologies. Anyone interested in a career in Mechanical Engineering, Machining, Design, Manufacturing and Mechanics should consider this class.

Construction - Semester

This course provides experiences in STEM (Science Technology Engineering Mathematics) problem solving for wood technology that meets for half of the year. Instruction is provided in Understanding wood characteristics, wood joinery, adhesive properties, and building for strength. An emphasis is placed on the selection, safe use and care of woodworking hand and machine tools as well as technical processes needed to perform problem solving activities. The foundation of basic construction production methods will be discussed and utilized to design, produce, test ENGINEER & analyze various wood construction technologies. Students will be presented with a design challenge that they will need to design a solution to solve the problem. Anyone interested in a career in Mechanical Engineering, Cabinet and Furniture Design, Logging industry and Building Construction should consider this class.

Manufacturing Engineering

This S.T.E.M. (Science Technology Engineering and Mathematics) course relates to metal technology & engineering giving instructions in enhanced manufacturing and engineering techniques, forging and heat-treating, sand casting, manual machining, welding, metal spinning. An introduction to robotic operations will also be utilized. An emphasis is placed on the selection, safe use and care of metal working hand and machine tools as well as technical processes needed to engineer and design a utilitarian project.

Pre-requisite: Pre-Engineering.

Anyone interested in a career in mechanical engineering, machining, design, manufacturing, fabrications, welding and mechanics should consider this class.

Automation Programming & Engineering

Automaton provides experiences in S.T.E.M. (Science Technology Engineering and Mathematics) problem solving with reference to the procedures for manually programming Computer Numerical Control (CNC) equipment. Students will then master the MasterCAM software, a Computer Aided Manufacturing (CAM) program, which converts the given geometry of manufactured products into readable code for the CNC Mill and Lathe. Students will then perform advanced programming, debugging, setup, and interfacing of the Scorbot ER III robotic arm with the CNC equipment as well as the Scorbot ER IV robot to perform automated welding.

PREREQUISITE: NONE however must be a junior or senior.

Anyone interested in a career in Engineering, Machining, Programming, Manufacturing and Automation/Robotics should consider this class.

Foundations of Technology

This course is designed to give students an understanding of what is technology, and apply it to different situations while learning and applying the Engineering Design Process to solve a problem. Students will study the influence of technology on history and determine if it had a positive or negative effect. They will gain an understanding of how an idea becomes a product, by studying manufacturing technologies, construction technologies, energy and power technologies, and information technologies. Students will be challenged with various design briefs, while working with team members, to engineer a device solve a problem, which would include redesigning, and then presenting their solution to the class. This is a STEM (Science Technology Engineering Mathematics) related class that will need all areas to create a solution to a problem. Students will get an opportunity work in the construction (wood) lab and will do research on computers. Anyone interested in becoming an Engineer, going to college, wanting to become a better problem solver, or wants to be involved in TSA (Technology Student Association) should consider this class.

Wood Construction Engineering

Prerequisite - Pre-Engineering Class

This STEM (Science Technology Engineering Mathematics) related course will increase the student's skills of hand tools, power tools and machines. Students will gain insight of industry and how it works through a mass production project; careers in construction; wood building material, and safety while on the job. Students will learn about transportation technologies, especially dealing with land vehicles. Students will be challenged with at least two design briefs, where they will need to use the Engineering Design Process to solve the problem. Students will be given time to research, design, build, test, and analyze their solution. Also, an establishment of community and/or school projects according to his/her own needs, along with group projects will be performed during this class. This class is recommended for anyone who wants to gain a woodworking hobby and learn about transportation technologies.

Wood Construction Engineering II

Prerequisite - Pre-Engineering Class

This cross curriculum advanced STEM (Science Technology Engineering Mathematics) course deals with house construction, furniture making, and water and air transportation technologies. This course is designed to give students an understanding of how houses are built, while building a scale model, so that they are better educated for home ownership and repair. Students will also learn about water and air technologies while being given at least two design challenges to solve using the engineering design process and general problem solving techniques.

Wood Construction Engineering III

Prerequisite – Construction Engineering

This STEM (Science Technology Engineering Mathematics) course will use the knowledge the students acquired in the previous courses to design and draft projects of their own. Students will use the knowledge of joinery, adhesives, and wood characteristics to complete these projects. Students will also be given a chance to solve design challenges based on the knowledge that they learned in previous courses.

Family Consumer Science

Imagine how much easier your life will be with the skills to manage money, to prepare a variety of foods, and to design, construct and repair your own clothes. In FCS, you explore the essential life skills necessary to survive on your own. The "On Your Own" computer simulation enables you to problem solve with all the skills acquired in the financial and personal management units. You will acquire the skills needed to prepare grains, vegetables, fruits, dairy, meats, and candy. The final project in the culinary arts unit is the creation of a budgeted theme dinner. In a textile unit, you will design and construct a garment to enhance your body type. Selection of fabric, repairing current garments and embroidering are also explored.

Nutrition

Do you want to learn how to prepare nutritious and tasty food? Are you trying to figure out what diet is the best for your body? You are invited to a class that will change the way you look at food and the preparation techniques. Body weight, body image, nutritional analysis, and healthy food preparations are just a few of the units explored. Join in on learning the facts about the food you eat and the fuel up on choices to improve your nutritional lifestyle. Calling all perspective dieticians, health-care, nursing, and people that would like to live a long healthy life-this journey is waiting for you.

Human Development

Understanding yourself is the first step to allow you to care and work with others. If you are planning on working in any field that you would be working with people you should check out the human development class. The course starts off with you getting to understand yourself and your values and ethics. Things then move along with conception to birth for a closer look at the babies development and new technologies along the way. We take an in depth look at fertility options and ways to help your baby start off on the right track. We move along into the birth to toddler stages to get to understand the importance of play and the development of the child. During the school age years we will bring in some developmental theorists that will help us to grow and develop our knowledge on child development. Lastly we will look at adolescent risk and resiliency. Drug and alcohol addictions, learning disorders and the way the adolescent brain works.

Teen Life

Moving to the high school and the start of the teen age years bring upon a lot of questions, concerns, and stresses. This course is designed to help teens work through some of teen's biggest problems. Change is always hard and we will work through ways to cope and adjust to teen life.

FINE ARTS

Art I

Art I is the study of the basic design principles and elements, which are used in drawing, painting, printmaking, sculpture and graphic design. This study provides the student with multi-media creative activities emphasizing both two and three-dimensional compositions.

Art II

Art II continues to study the principles and elements of design used in drawing, painting, printmaking, sculpture and graphic design. This advanced study provides the student with multi-media creative activities emphasizing both two and three-dimensional compositions.

Art III

The Art III course is designed for the serious art student. Students taking this course will continue to develop their skills in drawing, painting, and 3-d design. Emphasis will be placed on developing a body of work that can be used as a portfolio. Pre-requisite for this course is ART I and ART II.

Band

The course provides a musical experience for students that includes but is not limited to the classroom. Students will explore basic music theory, history and composition, based upon their current individual level of achievement in band. Extracurricular events (marching, jazz, honors band) are not required parts of the course but are strongly advised. Students who participate in these extra ensembles receive extra credit reducing the normal classroom workload. The culmination of this class is at least two public concerts per year.

Chorus

The purpose of this course is to increase the student's awareness of all aspects of choral singing. Emphasis will be placed upon: 1) methods used to provide a strong tonally acceptable individual choral sound; 2) factors needed to work with other singers in the formation of successful choral ensembles; and 3) the technique of polyphonic singing within a choral ensemble. Pre-requisites of this course: 1) previous experience in the middle school chorus in 8th grade; 2) successful completion of an interview/audition with the Choral Director. Students will be expected to perform in at least two public concerts per school year as part of their mid-term and final evaluations. Extra credit will be given to students who participate in extra ensembles; such as District and Regional Choral Festivals as well as the audition for District chorus and any small choral ensemble that rehearses after school. Each student will be evaluated on his or her individual performance level.

Miscellaneous

Physical Education

This course is designed to increase socialization through sports and games, to teach fundamental skills in dual, team, and individual sports activities, to supply better outlets for use of leisure time, and to create and maintain the highest possible level of physical fitness for meeting the demands of everyday living.

Health

This course is designed to encourage good health behaviors. It will help students feel responsible for their own health. It will emphasize choices students should make to maintain and improve health. It leads students to realize that all their decisions affect their physical, mental and social well-being and that their behaviors today affect the quality of their health later on.

Journalism

This elective is designed for students with strong writing skills, working computer knowledge, and a desire to be a member of the school newspaper staff. The focus is on print media. Students learn to write accurate news stories, editorials, and features by examining models and by extensive practice. Written work is submitted for publication in the school newspaper; a student's goal is to publish in each issue. Studies include formatting layout and composing copy on IBM computers. Students learn interviewing and researching skills and explore creative avenues through photography, artwork, poetry, and short story submissions to the newspaper. Students also investigate options for careers in journalism. It is recommended that students who take journalism have maintained a "C" or better in English.

Yearbook Publication

This elective is a technical and productive skill course designed for the completion of the Northern Cambria High School yearbook. The students are given the opportunity to learn photography, to plan page layouts, and to format pictures and copy placement, develop advertising and sales skills, demonstrate proofreading and correction skills, and create financial plans for the expenses of yearbook records using Microsoft Word and Microsoft Excel. Students will learn and use PageMaker 6.5 and Publisher Templates to plan, format, and complete yearbook pages.

SAT PREP

This course is designed to prepare students for the SAT. This one semester course will teach students the format of the test and provide strategies and practice for questions found within the test. Course time will also be devoted to practice problems similar to those on the SAT.

