North Point High School
for
Science, Technology and Industry

Guide to Career Majors

For the Graduating Class of 2013

Supplement to the
Charles County Public Schools
Program of Studies

Fall 2008

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Mission
The mission of Charles County Public Schools is to educate all students to enable them to reach their potential and to be productive members of society.

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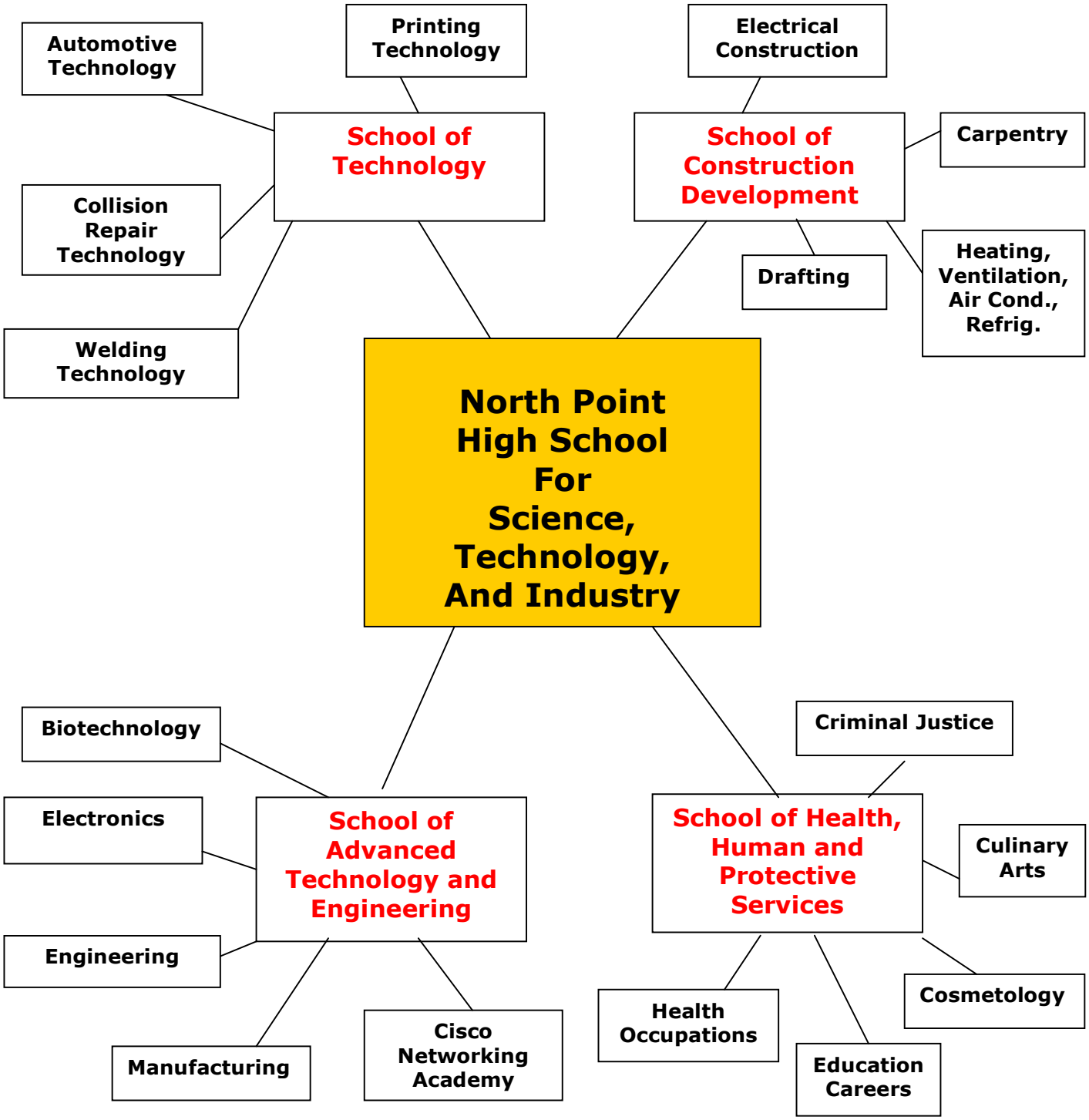
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Important! Please read!

Welcome to North Point High School!

In order to provide a **focused and purposeful** high school experience, the Guide to Career Majors has been created to help students, parents and guidance counselors design a four-year sequence of courses centered on the student's future plans.

This guide is a supplement to the Charles County Public Schools High School Program of Studies. Please refer to the Program of Studies for detailed course descriptions of academic and elective courses offered. Graduation requirements, math requirements and other important school system information are also provided in the Charles County Public Schools High School Program of Studies.

Some definitions of terms used in this guide:

- **School:** a group of related programs of study. For example, the School of Construction Development includes four programs, Carpentry, Electrical Construction, Drafting and HVACR.
- **Program:** a course of study within a school. For example, Electrical Construction is a program within the School of Construction Development.
- **Pathway:** a specific, four-year course of study that prepares a student for his/her post-secondary goals. For example, there is a career major within Electrical Construction for students who wish to become an Electrical Engineer.

Each grade column in this guide provides students with an outline of required and recommended courses to prepare them for success in their chosen field. The courses were selected in consultation with professionals currently working in each field as well as representatives from post secondary schools. **The courses are an example of a meaningful sequence of courses for students.** Although we encourage students to take the courses outlined in this booklet, selections listed as "recommended" may be customized based on student need and/or interest in related areas. Be sure to consult with a guidance counselor when establishing a four-year path to ensure that it includes all Maryland graduation requirements.

Refer to the Mathematics section of the Charles County Public Schools High School Program of Studies for the most appropriate math course sequence. Remember that some STI programs have math prerequisites.

Upon graduation, students may earn their high school diplomas as well as certification that they have completed a rigorous course of study in their chosen career field. To earn a special designation with their diploma, students are strongly encouraged to take 4 years of math and 4 years of science at North Point High School.

School of Advanced Technology And Engineering

Biotechnology

Cisco Networking Academy

Electronics

Engineering

Manufacturing

Biotechnology

PREREQUISITE: Successful completion of Algebra 1 in middle school.
Biotechnology is a lab-based program for **college-bound students who have a strong interest and ability in science**. Students will participate in scientific exploration with direct and indirect applications to the improvement of the quality of life. The program will include an introduction to techniques used in many biotechnology fields, such as DNA analysis, gene technology, and bioengineering in agriculture. Students in Biotechnology will supplement their study with multiple science classes each year. Biotechnology students will be expected to take Advanced Placement science courses such as AP Chemistry, AP Biology, AP Physics, AP Environmental Science. Fees may be required.

Four year college degree pathway: Leads to careers such as physician, scientist, research associate, chemist, microbiologist, quality control analyst
Two year technical school, apprenticeship, or military pathway: Leads to careers such as laboratory technician, research assistant, instrumentation technician

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	Algebra 2 or *Geometry	*Geometry or Adv.Alg/Trig	*PreCalc or AP Stat	* Calculus or AP Stat
3	*Earth Science	Honors Chemistry	Honors Physics	AP Science
4	Honors Biology	AP Biology OR AP Environ-mental Science	AP Science	Bioinformatics
5	*Local, State, National Gov't.	*US History	*World History	Biotechnology 3
6	Fit for Life	Biotechnology 1	Biotechnology 2	Biotechnology 3
7	Fine Art	Programming-Design/Logic Or Elective	Programming-Design/Logic Or Elective	World Language or Elective
8	World Language	World Language	World Language Or Elective	Elective

= Required = Recommended

- ***Course level for academics is determined by teachers, counselor, student and parent. Students are expected to take the level that best challenges and advances their abilities**.
- A sequence in a fine art or JROTC can possibly be substituted for recommended courses based upon student interest.
- PLEASE NOTE: Required and recommended courses, course descriptions and course codes are continually being refined and updated. So slight changes to a program may occur during a student's four years at North Point.

Biotechnology Course Descriptions

Course	Course	Credits	Grade	Codes
Biotechnology 1: Students will learn how to make serial dilutions for antibodies, make solutions, make buffers to run a gel and conduct Gel Electrophoresis (making and running a gel of DNA). Students will also learn how to analyze DNA, digest DNA using restriction enzymes, amplify single and double stranded DNA by using PCR, conduct a plasmid DNA transfer, and sequence DNA. They will also learn how to collect protein, purify the protein and extract the specific protein by using several different techniques including column chromatography and spectrophotometer.	17174N	1	10	TE, W
Biotechnology 2: Students will be able to learn how to analyze spectrophotometer readings, determine if a molecule is present, and determine the concentration of that molecule. Students will practice transforming cells and analyzing the transformed cells. They will also further investigate organisms by using chromatography techniques, protein/antibody engineering, PCR and DNA analysis. Students will also conduct several investigations using plants. They will clone plants by using tissue culturing, produce products using plants, and investigate how to use plants for medicine.	17175N	1	11	W
Biotechnology 3: Students will learn how to apply the techniques and procedures from Biotechnology 1 and 2 to real-world situations. Students will explore applications that include the production of a bioinsecticide, bioremediation, phytoremediation, forensic analysis, hybridization analysis and enzymatic production and use. They will also expand their expertise in laboratory techniques related to biotechnology.	17176N	2	12	W
Bioinformatics: Students will explore online biological databases. They will search these databases and judge the quality and uses of the information, and create their own databases for an assigned application. Students will learn some of the basic online tools of genomics and proteomics, and their use in biotechnology.	17177N	1	12	W

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Cisco Networking Academy

PREREQUISITE: Successful completion of Algebra 1 in middle school.

Cisco Networking Academy is for students **with strong math skills and a desire to work in the computer field.** In this program students prepare for the Cisco Certified Entry Technician (CCENT) and Cisco Certified Network Associate Certification (CCNA) in which they learn the fundamentals of local and wide area networks using Cisco hardware and protocols. Students also prepare for the Cisco Certified Network Professional (CCNP) designation which includes learning complex networking concepts and sophisticated configurations. Fees may be required.

Four year college degree pathway: Leads to careers such as network design engineer, Cisco engineer, senior systems analyst, telecommunication engineer, IT project manager, technical sales executive

Two year technical school, apprenticeship or military pathway: Leads to careers such as network administrator, network systems engineer, network technician

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	Algebra 2 or *Geometry	*Geometry or Adv.Alg/Trig	*PreCalc, AP Stat or Adv.Alg/Trig	* Calculus, PreCalc, AP Stat
3	*Earth Science	*Biology	*Chemistry	Cisco 2 - CCNP
4	*Local, State, National Gov't.	*US History	*World History	Cisco 2 - CCNP
5	Computer Util.	Cisco IT Essentials 1	Cisco 1 - CCNA	Cisco 2 - CCNP
6	Fit for Life	Programming-Design/Logic	Cisco 1 - CCNA	Cisco 2 - CCNP
7	Fine Art	Web Design and Development or tech ed elective	Programming-JAVA or tech ed elective	NOVELL Internship (if qualify) or AP Computer Science
8	World Language	World Language	World Language Or Elective	World Language Or Elective

= Required = Recommended

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Cisco Networking Academy Course Descriptions

Course	Course #	Credits	Grade	Codes
Cisco IT Essentials 1: By the end of this course, students will be able to: install, configure and upgrade hardware; diagnose and troubleshoot hardware; conduct preventive maintenance; work with motherboards, processors and memory; work with printers; understand the fundamentals of basic networking; understand operating system fundamentals; install, configure and upgrade operating systems; diagnose and troubleshoot operating systems; develop a more in-depth understanding of networks. All skills are taught in a hands-on, lab-oriented environment where safety and teamwork are emphasized. This course prepares students to take the Comp TiA A+ certification exam.	172514	1	10	W, CC
Cisco 1 – CCNA: This accelerated course is designed to prepare students to work in the information technology industry as network administrators. Students are taught the fundamentals of local and wide area networks using CISCO hardware and protocols. In addition to computer-based activities, students will formally construct a network. The topics taught will include networking fundamentals, routing theory and router technologies, and advanced routing and switching. The CISCO Networking Academy prepares students to take the CISCO Certified Entry Technician and CISCO Certified Network Associate certification examinations.	C1797N	2	11	W, CC, CTP
Cisco 2 – CCNP: The CISCO Certified Network Professional (CCNP) curriculum includes semesters five and seven of the CISCO Academy and will prepare students for the CCNP certification exam. The CCNP curriculum examines complex networking concepts such as troubleshooting and more sophisticated configurations. Areas of study will include building scalable internetworks and multi-layer switching. This course prepares students to take the Building Scalable Cisco Internetworks (BSCI) and Building Cisco Multilayer Switching Networks (BCMSN) exams.	17905N	4	12	W, CTP

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Electronics

PREREQUISITE: Successful completion of Algebra 1 in middle school.

The Electronics program provides a study of basic electronics, resistance, circuits and their application to computers. College-bound electronics students may decide to compliment their study of electronics with the Cisco Networking Academy during their junior and senior years. Fees may be required.

Four year college degree pathway: Leads to careers such as electrical engineer, computer engineer, support engineer, project manager
Two year technical school, apprenticeship or military pathway: Leads to careers such as electronics technician, electronics installers and repairers, computer technician, automation mechanic, help desk technician

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	Algebra 2 or *Geometry	*Geometry or Adv.Alg/Trig	*PreCalc, AP Stat or Adv.Alg/Trig	*AP Calculus, PreCalc, AP Stat
3	*Earth Science	*Biology	*Chemistry	*Physics
4	*Local, State, National Gov't.	*US History	*World History	Advanced Elec./Telecomm.
5	Fit for Life	Basic Electronics	Electronic Applications	Advanced Elec./Telecomm.
6	Pre-Eng. Technology	Computer Utilization	Electronic Applications	Cisco 1 or elective
7	Fine Art	First Aid & Safety/Intro to Weight Trng.	Cisco IT Essentials 1 or computer class	World Language or computer class
8	World Language	World Language	World Language	Elective

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Electronics Course Descriptions

Course	Course #	Credits	Grade	Codes
Basic Electronics: The purpose of this course is to present fundamentals of electronics – dc and ac electrical circuits – by analysis and logical deduction with emphasis throughout in a practical, down-to-earth approach. Students will participate in experiments using the Volt-Ohm-Milliamp meter, Digital Multimeter (DMM), oscilloscope, signal generator and other test instruments which technicians use in industry. Numerous projects are used that will develop the proper use of test equipment and hand tools used in the electronics industry.	172214	1	10	CC, W
Electronic Applications: This course will present the skills and techniques involved in the design and layout of printed circuit boards (PCB) for electronic devices and systems. Topics include component operation and characteristics, schematic capture drawing generation, porting netlists to PCB layout software, and layout and routing of boards and generation of artwork. Component modeling, operating parameters and circuit function simulation will be introduced. Other topics include use of simulation software, virtual test equipment, analysis of circuit operation, and modification of circuits to meet specifications and test criteria.	C1794N	2	11	CC, W CTP
Advanced Electronics/Telecommunications: Students in the last year of the Electronics Program will study both digital networks and communication standards, such as TCP/IP, 12C, CAN and many others. The standards tend to proliferate and to lose value over time as technology progresses, so students will use the widely used standards of the day. Some TCP/IP applications performed in class will deal with embedded internet or computer-to-computer communications through the internet without human involvement or intervention. Wireless technology will be taught in depth. Students will benefit from understanding wireless especially since much of the wireless technology has been merged with digital. This course will provide training geared toward obtaining FCC licensing should the student wish to pursue a career path involving wireless systems.	C1795N	2	12	CC, W, CTP

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Engineering

PREREQUISITE: Successful completion of Algebra 2 in middle school.
Engineering is designed for **college-bound students who have a strong math and science background and interest, and who wish to pursue a career in engineering.** Students will examine basic electronics, computer applications, robotics, CADD, material science, physics and other related topics. Analyzing, synthesizing and evaluating data will be stressed through laboratory experiences and project design. Fees may be required.

Four year college degree pathway: Leads to careers in all areas of engineering – aeronautical, automotive, biomedical, chemical, civil, computer, electrical, environmental, industrial, materials, mechanical, nuclear, marine, optical, petroleum.

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	Honors Geometry	Adv.Algebra/ Trigonometry	*PreCalculus	*Calculus
3	*Biology	*Physics	*Chemistry	Advanced Engineering Research/Design
4	*Local, State, National Government	*US History	*World History	AP Physics
5	Introduction To Engineering	Engineering Fundamentals	Engineering Applications	AP Stat or AP Biology or AP Chemistry
6	Fit for Life	Computer Apps. For Engineers	Engineering Applications	CADD
7	Fine Art	Technology Ed elective	Basic Electronics	Internship or elective
8	World Language	World Language	World Language	World Language

= Required = Recommended = **Highly Recommended See Engineering Teachers**

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Engineering Course Descriptions

Course	Course #	Credits	Grade	Codes
Introduction to Engineering: This is the introductory course for the Engineering Pathway. This course encompasses a wide variety of manufacturing processes and technological systems as well as a plethora of problem-based learning in a variety of engineering fields. This course engages high school students through project and problem based learning. Problem solving and real world research are integral parts of this curriculum.		1	9	W
Engineering Fundamentals: All laboratory work, experimentation and engineering projects in this course will result from studies conducted in the honors physics course taken in conjunction with Engineering Fundamentals. Topics follow directly from the physics course and include measurement, motion, forces, work and energy, momentum, electricity, fluids, optics and nuclear physics. Students will gain experience in using a variety of scientific equipment. In addition to laboratory experiments, engineering projects will emphasize application of physics principles to real world engineering problems.	172414	1	10	CC, W
Computer Applications for Engineers: In order to be successful in the engineering field, students need to become literate in the computer tools engineers use. After completing this course, students will be able to: program a scientific graphing calculator to store, input, loop, list and graph; build and model projects using Autodesk Inventor consisting of 3-D modeling, constraining geometry and standard dimensioning; model and simulate various engineering principles; utilize all functions of Microsoft Excel including differentiation, integration and other pertinent engineering functions; utilize a programming language for engineering applications using Visual Basic.	172314	1	10	W
Engineering Applications: Students will have the opportunity to extend and enhance their understanding of physics, electronics and computer applications in more advanced topics. They will build upon the foundation of basic principles formed during their first two years in the Engineering program to expand their knowledge of necessary skills in the engineering field. Employing classroom study as well as outside resources and field trips, students will be taught engineering industrial applications and management practices in the civil, mechanical, aeronautical, aerospace and electrical fields. This course is structured with lectures on engineering principles and is reinforced with laboratory exercises demonstrating their understanding of these subjects as they apply to industrial practices. Through the combination of questioning, observing, creating, experimenting and building, students will begin to see the many interconnections between all they have studied.	C1710N	2	11	W
Advanced Engineering Research and Design: Advanced Engineering Research and Development consists of elements of formal research along with independent research that will lead to a patent-based project. A prototype and presentation will be made and presented by each student to an advisory board.	172424	1	12	W

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Manufacturing

The Manufacturing program provides students with the skills and information to program and operate Computerized Numerical Control (CNC) machines, in order to create objects they have designed. College bound students in this program supplement the manufacturing curriculum with other technology, CADD and computer programming courses, to prepare them for a career in manufacturing or engineering.

Four year college degree pathway: Leads to careers such as manufacturing, product systems control or mechanical engineer
Two year technical school, apprenticeship or military pathway: Leads to careers such as CNC machinist, CNC programmer, CNC operator, materials manager, CAM technician

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	*Math	*Math	*Math	*Math
3	*Earth Science	*Biology	*Chemistry	*Physics
4	*Local, State, National Gov't.	*US History	*World History	Manufacturing 2
5	Fit for Life	Introduction to Manufacturing	Manufacturing 1	Manufacturing 2
6	Computer Utilization	CADD	Manufacturing 1	Manufacturing 2
7	Fine Art	Technology Education elective	Elective	Elective
8	World Language	World Language	World Language Or Elective	World Language Or Elective

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Manufacturing Course Descriptions

Course	Course #	Credits	Grade	Codes
Introduction to Manufacturing: This is the first of three courses designed to provide students with the opportunity to safely investigate basic manufacturing techniques including layout, cutting, sanding, shaping, routing, drilling and planning. The students will use a variety of hand tools, including rulers, tape measures, hammers, punches, screwdrivers, handsaws, and files. Students will use a variety of materials that including wood, metal and plastic. They will learn how to safely operate both stationary and hand held power equipment. They will design and fabricate everyday objects and evaluate the usefulness of the design, product development, and production planning and quality assurance. The students will also look at key items in the development of laboratory layout that includes safe working zones around machinery, machine safety and guarding, and eye protection. The students will work in groups and discuss the benefits of their designs.	172614	1	10	This program is being piloted in Maryland. It is scheduled to be a CTP (completer course.)
Manufacturing 1: Manufacturing 1 is the second of three courses and is designed to provide students with the opportunity to safely investigate basic manufacturing techniques that include mass production and LEAN manufacturing practices, such as 5S, KANBAN and cell design. The students will use a variety of hand tools, hand operated machine tools and CNC equipment. Students will use a variety of materials that include wood, metal and plastic. They will evaluate properties of the materials, including flexibility, malleability, hardness, and magnetic properties. They will design using CADD software, fabricate everyday objects and evaluate the usefulness of the design, product development, production planning and quality assurance. They will learn rapid prototyping techniques. They will use precision measuring devices to increase tolerances. The students will examine production practices that are used in industry and evaluate there effectiveness.	17152N	2	11	
Manufacturing 2: Manufacturing 2 is the last of three courses and is designed to provide students with an extended opportunity to safely investigate manufacturing techniques that include mass production and LEAN manufacturing practices. The students will use a variety of hand tools, hand operated machine tools and CNC equipment. Students will use a variety of materials that include wood, metal and plastic. They will design using CADD software, fabricate everyday objects and evaluate the usefulness of the design, product development, and production planning and quality assurance. They will use precision measuring devices. Students will also make visits to job sites so they can apply real world manufacturing situations to what they are learning in the classroom.	17153N	3	12	

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School of Technology

Automotive Technology

Collision Repair

Printing Technology

Welding

Automotive Technology

The Automotive Technology program emphasizes hands-on and theoretical experience using state-of-the-art diagnostic equipment and tools. Students will supplement their study of automotive technology with courses such as CADD, Pre-Engineering and Principles of Business. Students who complete this program receive one year of work credit toward their ASE certification. Fees and uniform are required**. PLEASE NOTE: NATEF/ASE requires an exit exam, which tests knowledge about automobiles learned over the 3 years in the course and which requires strong reading skills.**

Four year college degree pathway: Leads to careers such as automotive or mechanical engineer, design specialist, dealership owner
Two year technical school, apprenticeship or military pathway: Leads to careers such as ASE Certified Technician, parts manager, diesel mechanic, alignment specialist, small engine technician, tire specialist, transmission technician, tune-up technician, front-end mechanic

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	*Math	*Math	*Math	*Math
3	*Earth Science	*Biology	*Chemistry	Automotive Technology 3
4	*Local, State, National Gov't.	*US History	*World History	Automotive Technology 3
5	Fit for Life	Automotive Technology 1	Automotive Technology 2	Automotive Technology 3
6	Computer Utilization	First Aid&Safety/ Intro. to Wt.Trng.	Automotive Technology 2	*Physics
7	Fine Art	Computer Apps. OR Tech Ed Elective	CADD OR Elective	Prin. Bus. Manage. OR Elective
8	World Language	World Language	World Language Or Elective	World Language Or Elective

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Automotive Technology Course Descriptions

Course	Course #	Credits	Grade	Codes
Automotive Technology 1: In the first year of this course, students will learn to identify and use safely the tools used in the profession. They will participate in elementary lab tasks involving engine rotation, valve trains, timing, small engines, Bernoulli's Principle, Venturi Effect, tire construction, micrometer, material safety, welding, brazing.	17039N	1	10	
Automotive Technology 2: This course builds on the skills acquired in the first year. Units studied include: brakes; hydraulic repairs; MIG welding; front suspension, steering and alignment; engine operation and performance; displacement; fuel system components and functions; data stream reading; emission controls; hybrids; an introduction to electricity, magnetism and electrical circuits; introduction to batteries.	17040N	2	11	CTP
Automotive Technology 3: Students will extend the skills learned in the previous two years, including electricity, battery and alternator functions. Other units taught are ABS systems; front suspension; clutch systems, emissions systems. They will also learn about the business end of automotive repair. Students will prepare for the SkillsUSA competition. They will also take mock ASE tests, to prepare for the ASE testing they may take after completing the course. All seniors are required to take an end-of-program on-line test on brakes, steering and suspension, engine repair and electrical. All seniors will complete a senior project, which includes written and oral components, as well as a senior portfolio, which includes an interview.	17041N	3	12	CTP

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Collision Repair

The Collision Repair program prepares students for a career in the auto finishing or auto body repair field. Some of the skills students learn are auto body construction, estimating, welding, basics of automobile painting, and frame straightening. This course follows the nationally recognized ICAR curriculum and is supplemented with courses in art, computers and business. Uniform and fees are required**.**

Four year college degree pathway: Leads to careers such as collision repair business owner, insurance adjustor.
Two year technical school, apprenticeship or military pathway: Leads to careers such as estimator, painter, body man

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	*Math	*Math	*Math	*Math
3	*Earth Science	*Biology	*Chemistry	Collision Repair 3
4	*Local, State, National Gov't.	*US History	*World History	Collision Repair 3
5	Fit for Life	Collision Repair 1	Collision Repair 2	Collision Repair 3
6	Art 1	First Aid&Safety/ Intro. to Wt.Trng.	Collision Repair 2	*Physics
7	Computer Utilization	Computer Apps. OR Tech. Ed elective	Art 2 OR Elective	Prin. Bus. Manage. OR Elective
8	World Language	World Language	World Language Or Elective	World Language Or Elective

= Required = Recommended

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Collision Repair Course Descriptions

Course	Course #	Credits	Grade	Codes
Collision Repair 1: In the first year of Collision Repair, students will address the safe use of hand tools, equipment, product safety and personal safety. The construction of the automobile will also be taught, and students will identify all car parts. They will also identify and learn the safe use of hand tools, auto body tools, power tools. Minor damage repair will be studied as well.	17029N	1	10	
Collision Repair 2: In the second year, students will learn various types of welding, body panel replacement, paint preparation, masking, fiberglass repairs, plastic repair and composite material.	17030N	2	11	CTP
Collision Repair 3: The third year of Collision Repair involves learning the basics of painting automobiles. Students will also study framework, suspension, estimating, and major damage repair. Students who are successful in the program may be able to participate in work study.	17031N	3	12	CTP

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Printing Technology

The Printing Technology program is designed to give students an overall understanding of the graphing and printing industries and their major operations while teaching competencies that lead to certification. Students may gain certification in Introduction to Graphic Communication, Digital File Preparation and Press Operations. Besides certifying exams, students will complete senior projects for portfolios. Fees may be required.

Four year college degree pathway: Leads to careers such as graphic designer, print and digital production supervisor, printing sales, purchasing agent, desktop publisher, pre-press manager

Two year technical school, apprenticeship or military pathway: Leads to careers such as estimator, assistant print shop manager, cost analyst, customer service representative, bindery and finishing technician, imaging specialist, press operator

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	*Math	*Math	*Math	*Math
3	*Earth Science	*Biology	*Chemistry	*Physics
4	*Local, State, National Gov't.	*US History	*World History	Printing Technology 3
5	Fit for Life	Printing Technology 1	Printing Technology 2	Printing Technology 3
6	Computer Utilization	Art 2	Printing Technology 2	Printing Technology 3
7	Art 1	*Web Design or Tech Ed elective	Photography 1 or *Web Design	Photog. 1 or 2 OR AP Art
8	World Language	World Language	World Language	World Language Or Prog: Design/Logic

= Required = Recommended

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Printing Technology Course Descriptions

Course	Course	Credits	Grade	Codes
Printing Technology 1: This course is designed to give the students a basic understanding of the printing and graphics industry, including the history of print, typography, an over view of flexography, gravure, screen printing, letterpress, with a focus on lithography. The students will learn how to take projects through the pre-press, press and bindery stages of the lithographic process. Students will operate equipment and work with software equivalent to what is used in commercial printing plants around the area. This course is designed to prepare the students for the Introduction to Graphic Communications certification exam, through the Print ED certification process.		1	10	
Printing Technology 2: This course is designed to further the student's knowledge of the pre-press process. Students will learn how to produce print-worthy material in industry standard software for page layout, image editing, and image creation. The students will also be introduced to basic design principles, including color, spacing, alignment, and more advanced typography. In this course students will spend most of their time in the computer lab. This course is designed to prepare the students for the Digital File Preparation certification exam, through the Print ED certification process.		2	11	CTP
Printing Technology 3: The culminating course provides advanced study into the most major facet of the printing industry. Students will design, create and print multi-color projects using lithographic printing equipment. The daily activity is a combination of class projects and the production of live work contracted from other schools, non-profit organizations and the Board of Education. This course is designed to prepare the student for the Press Operations certification exam, through the Print ED certification process.		3	12	CTP

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Welding Technology

Students in the Welding Technology program learn to cut ferrous and non-ferrous materials using oxyacetylene, plasma, air arc and various cutting tools and machines. College bound students in this program supplement the welding curriculum with engineering and computer courses. All students in the welding program prepare for American Welding Society (AWS) certifications. Uniform and fees required.

Four year college degree pathway: Leads to careers in all areas of welding and structural engineering.
Two year technical school, apprenticeship or military pathway: Leads to careers such as steamfitter, sheet metal mechanic or apprentice, project foreman

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	*Math	*Math	*Math	*Math
3	*Earth Science	*Biology	*Chemistry	Welding 3
4	*Local, State, National Gov't.	*US History	*World History	Welding 3
5	Fit for Life	Welding 1	Welding 2	Welding 3
6	Computer Utilization	First Aid&Safety/ Intro. to Wt.Trng.	Welding 2	*Physics
7	Fine Art	CADD OR Tech Ed elective	Comp. Apps. OR Elective	Prin. Bus. Man. OR Elective
8	World Language	World Language	World Language Or Elective	World Language Or Elective

= Required = Recommended

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Welding Technology Course Descriptions

Course	Course #	Credits	Grade	Codes
Welding 1: In the first year of Welding, students concentrate on learning basic safety. They also review construction-related math. The use of hand tools and power tools used by welders is introduced. Students learn the basics of blueprint reading as well. Basic rigging techniques and tools are also taught, as are employability and communication skills.	17144N	1	10	
Welding 2: In the second year course, welding safety is reviewed. Skills taught include: oxyfuel cutting; base metal preparation; weld quality; SMAW (shield metal arc welding) equipment and setup; electrodes and selection; beads and fillet welds; groove welds; joint fit-up and alignment; open V-groove welds; SMAW certification test (D1.1 and/or D1.5).	17145N	2	11	CTP
Welding 3: Seniors concentrate on the following units: welding symbols; reading of welding detail drawings; SMAW stainless steel groove welds; air carbon arc cutting and gouging; plasma arc cutting; gas metal and flux core arch welding (GMAW, FCAW) equipment, filler metals, and plates; gas tungsten arch welding (GTAW) equipment, filler materials, plate and aluminum plate. Students will have the ability to take American Welding Society certification exams GMAW and FCAW (D1.1 and/or D1.5).	17146N	3	12	CTP (CC possible)

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School of Construction Development

Carpentry

Drafting

Electrical Construction

Heating, Ventilation, Air Conditioning and Refrigeration

Carpentry

Students in the Carpentry program will learn to design and build structures. Additional topics covered are tool safety, building materials, blueprint reading, measurement, area computing, and building codes. The carpentry curriculum is supplemented with math, world language, art, technology and business courses. NCCER – National Center for Construction Education and Research – provides standards, curriculum and assessments for this program. Uniform and fees may be required.

Four year college degree pathway: Leads to careers such as general contractor, construction superintendent, project manager, engineer
Two year technical school, apprenticeship or military pathway: Leads to careers such carpenter, construction foreman, building inspector, laborer

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	*Math	*Math	*Math	*Math
3	*Earth Science	*Biology	*Chemistry	Carpentry 2
4	*Local, State, National Gov't.	*US History	*World History	Carpentry 2
5	Fit for Life	Intro.Construct. Dev./Carpentry	Carpentry 1	Carpentry 2
6	Art 1 OR Theatre Arts	First Aid&Safety/ Intro. to Wt.Trng.	Carpentry 1	*Physics
7	Computer Utilization	CADD or Tech Ed elective	Principles of Business Management	Architecture and Interior Design
8	World Language	World Language	World Language Or Elective	World Language Or Elective

= Required = Recommended

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Carpentry Course Descriptions

Course	Course #	Credits	Grade	Codes
Introduction to Construction Development: In this course, each major in the School of Construction Development – Carpentry, Drafting, Electrical Construction and HVACR – will be introduced to the students. Students enrolled in one of the four areas will have six weeks of each of the courses that are not their major, and then a full second semester of their major course. Some of the skills taught in each six weeks are: Electrical Construction: demonstrating tool and ladder safety; understanding and applying DC electrical theory; demonstrating switch control of lighting circuits; using electrical meters to diagnose circuits; demonstrating application of series and parallel circuits; receiving an introduction to the National Electrical Code. Drafting: explaining the various aspects of sketches; demonstrating the use of English and metric scales, drawing media, projection lines; show views in an orthographic projection; executing basic drawing line commands; creating text using appropriate style and size. HVACR: fitting tubing using approved methods; demonstrating soldering and brazing techniques; describing the difference between alternating and direct current; using various electrical formulas to solve problems; wiring thermostats; identifying basic refrigeration components and heating systems. **During second semester, Carpentry** students will study the following areas: safely using portable power tools; reading fractions and using a tape measure; understanding blueprints; determining which materials are best suited for each part of construction; stating code requirements for framing.	172014	1	10	
Carpentry 1: In the junior year of Carpentry, students will begin at the foundation level and work all the way to the roof. The extensive training concentrates on framing and exterior finish. Students will do siding, soffett, fascia and roof work. They will learn how to do new and replacement roofing and how to install doors, windows, etc. Juniors will work on a house project when available. Physical work is part of the program: Students will be working in all the elements, hot and cold, and will be required to lift heavy objects.	17054N	2	11	CTP
Carpentry 2: In the senior year, the students will move into advanced work. They will learn interior trim and all finishing carpentry. Installing and fabricating cabinets and furniture are also taught. Commercial construction and Nudura Concrete homes are other topics introduced. Seniors will work on a house project when available. Physical work is part of the program: Students will be working in all the elements, hot and cold, and will be required to lift heavy objects.	17055N	3	12	CTP

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Drafting

PREREQUISITE: Successful completion of Algebra 1 in middle school

In Drafting, students start with the basics of mechanical drawing, then move into orthographic projections, sectional views and pictorial plans for use in many engineering fields. Other courses that are suggested for this major are Drawing and Design, Architecture and Interior Design, and Physics.

Four year college degree pathway: Leads to careers such as architect, civil engineer, specifications writer, environmental scientist

Two year technical school, apprenticeship or military pathway: Leads to careers such as drafting technician, CAD operator

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	*Algebra 2 or Geometry	*Geometry or Adv.Alg/Trig	*PreCalc or AP Stat	* Calculus or AP Stat
3	*Earth Science	*Biology	*Chemistry	*Physics
4	*Local, State, National Gov't.	*US History	*World History	Drafting 2
5	Fit for Life	Intro.Construct. Dev./Drafting	Drafting 1	Drafting 2
6	Art 1	Art 2	Drafting 1	Drafting 2
7	Computer Utilization	Architecture and Interior Design	Drawing/Design OR CADD	Prin.Bus.Man. OR Tech Ed Elective
8	World Language	World Language	World Language Or Elective	World Language Or Elective

= Required = Recommended

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Drafting Course Descriptions

Course	Course #	Credits	Grade	Codes
Introduction to Construction Development : In this course, each major in the School of Construction Development – Carpentry, Drafting, Electrical Construction and HVACR – will be introduced to the students. Students enrolled in one of the four areas will have six weeks of each of the courses that are not their major, and then a full second semester of their major course. Some of the skills taught in each six weeks are: Carpentry: safely using portable power tools; reading fractions and using a tape measure; reading simple blueprints; determining best materials; framing basics Electrical Construction: demonstrating tool and ladder safety; understanding and applying DC electrical theory; demonstrating switch control of lighting circuits; using electrical meters to diagnose circuits; demonstrating application of series and parallel circuits; receiving an introduction to the National Electrical Code. HVACR: fitting tubing using approved methods; demonstrating soldering and brazing techniques; describing the difference between alternating and direct current; using various electrical formulas to solve problems; wiring thermostats; identifying basic refrigeration components and heating systems. **During second semester, Drafting students** will concentrate on exploring the various aspects of sketches; demonstrating the use of English and metric scales; drawing media and projection lines; showing views in an orthographic projection; executing basic drawing line commands; creating text using appropriate style and size.	172014	1	10	
Drafting 1: The curriculum includes the origin and basics of drafting: line types, sketching, orthographic projection, pictorials, dimensioning, shading, etc. Students will be introduced to skills used in surveying, civil engineering and mechanical drafting. Students will be able to read, understand and use the "language of industry." They will develop professionally appropriate penmanship, in order to enable clear representation and understanding of the product. Students will develop complex mechanical drawings and demonstrate the ability to use and apply fractions, decimals, conversions, ratios and other basic math skills. AutoDesk Design Academy 2009 will be taught as the software used in the profession.	C1708N	2	11	CC,CTP, W
Drafting 2: Students will be introduced to the fields of architecture and structural engineering. They will work together as well as individually to research, design and construct models. Application of basic local building codes for residential construction will be taught. Students will learn to develop details for residential dwellings according to specific design requirements. They will develop architectural floor plans, exterior elevations, sections and details. One project will be to design and develop a landscape plan.	C1709N	3	12	CC,CTP, W

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Electrical Construction

PREREQUISITE: Successful completion of Algebra 1/Part 1 in middle school.
Electrical Construction students learn electron theory, basic circuitry, residential wiring, cable and wire types and motor control. Electrical construction has a strong partnership with local industry groups, and students can earn advanced standing by completing this program. NCCER – National Center for Construction Education and Research – provides, standards, curriculum and assessments for this program. Students need a strong background in math to be successful in Electrical Construction. Uniform and fees may be required.

Four year college degree pathway: Leads to careers such as electrical engineer, master electrician
Two year technical school, apprenticeship or military pathway: Leads to careers such as electrical apprentice, journeyman electrician, construction foreman, estimator, electrician's helper

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	*Math (Alg.1/Pt.2 or higher)	*Math	*Math	*Math
3	*Earth Science	*Biology	*Chemistry	*Physics
4	*Local, State, National Gov't.	*US History	*World History	Electrical Construction 2
5	Fit for Life	Intro.Construct. Dev./Electrical	Electrical Construction 1	Electrical Construction 2
6	Fine Arts Elective	First Aid&Safety/ Intro. to Wt.Trng.	Electrical Construction 1	Electrical Construction 2
7	Computer Utilization	Technology Ed elective	CADD	Principles of Business Man.
8	World Language	World Language	World Language Or Elective	World Language Or Elective

= Required = Recommended

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Electrical Construction Course Descriptions

Course	Course #	Credits	Grade	Codes
Introduction to Construction Development: In this course, each major in the School of Construction Development – Carpentry, Drafting, Electrical Construction and HVACR – will be introduced to the students. Students enrolled in one of the four areas will have six weeks of each of the courses that are not their major, and then a full second semester of their major course. Some of the skills taught in each six weeks are: Drafting: explaining the various aspects of sketches; demonstrating the use of English and metric scales, drawing media, projection lines; drawing views in an orthographic projection; executing basic drawing line commands; creating text using appropriate style and size. HVACR: fitting tubing using approved methods; demonstrating soldering and brazing techniques; describing the difference between alternating and direct current; using various electrical formulas to solve problems; wiring thermostats; identifying basic refrigeration components and heating systems. Carpentry: safely using portable power tools; reading fractions and using a tape measure; reading simple blueprints; determining best materials; framing basics **During second semester, Electrical Construction students** will be involved in demonstrating tool and ladder safety; understanding and applying DC electrical theory; demonstrating switch control of lighting circuits; using electrical meters to diagnose circuits; demonstrating application of series and parallel circuits; receiving an introduction to the National Electrical Code.	172014	1	10	
Electrical Construction 1: The electrical construction industry encompasses many fields. The junior year of this program provides foundational training in the many aspects of the electrical construction industry. Students will learn the skills and obtain knowledge necessary to work safely with the tools and materials of the trade. Students will concentrate on safety; application of mathematical skills; DC electrical theory; electrical conductor types and sizes; blueprint reading; residential wiring; and conduit bending. The course covers the construction, installation, and troubleshooting techniques of electrical systems. The student is taught to test, measure, and insure the proper functions of electrical measuring instruments, such as volt, amp and Ohm meters. Real world application of electrical skills are incorporated as the students complete outside projects.	17134N	2	11	CTP
Electrical Construction 2: All skills from Electrical Construction 1 are reviewed and taken to an advanced level. Topics taught include AC theory; electrical motor control; transformers; National Electrical Codeology; magnetic motor controllers, contactors, and relays. Students will be given an introduction to programmable logic controllers; variable frequency drives; fire alarm systems; and optical fiber. Students will also be involved in designing and installing the electrical system in a house project off site, when available.	17135N	3	12	CTP

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Heating, Ventilation, Air Conditioning and Refrigeration

Students in the HVACR program will be introduced to electricity, blueprint reading, electronics and soldering as they learn to troubleshoot and diagnose problems with heating, air conditioning and refrigeration units. Students may gain one year of credit toward the apprenticeship training, which leads to licensing, by completing this program. Uniform and fees required.

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	*Math	*Math	*Math	*Math
3	*Earth Science	*Biology	*Chemistry	*Physics
4	*Local, State, National Gov't.	*US History	*World History	HVACR 2
5	Fit for Life	Intro.Construct. Dev./HVACR	HVACR 1	HVACR 2
6	Fine Arts Elective	First Aid&Safety/ Intro. to Wt.Trng.	HVACR 1	HVACR 2
7	Computer Utilization	Technology Ed elective	CADD OR Elective	Prin.Bus.Man. OR Elective
8	World Language	World Language	World Language Or Elective	World Language Or Elective

= Required = Recommended

Four year college degree pathway: Leads to careers such as system engineer or designer, construction manager
Two year technical school, apprenticeship or military pathway: Leads to careers such as licensed HVACR technician, installer, sheet metal technician

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HVACR Course Descriptions

Course	Course #	Credits	Grade	Codes
Introduction to Construction Development: In this course, each major in the School of Construction Development – Carpentry, Drafting, Electrical Construction and HVACR – will be introduced to the students. Students enrolled in one of the four areas will have six weeks of each of the courses that are not their major, and then a full second semester of their major course. Some of the skills taught in each six weeks are: Drafting: explaining the various aspects of sketches; demonstrating the use of English and metric scales, drawing media, projection lines; show views in an orthographic projection; executing basic drawing line commands; creating text using appropriate style and size. Carpentry: safely using portable power tools; reading fractions and using a tape measure; reading simple blueprints; determining best materials; framing basics Electrical Construction: demonstrating tool and ladder safety; understanding and applying DC electrical theory; demonstrating switch control of lighting circuits; using electrical meters to diagnose circuits; demonstrating application of series and parallel circuits; receiving an introduction to the National Electrical Code. **During the second semester, HVACR students will learn**: fitting tubing using approved methods; demonstrating soldering and brazing techniques; describing the difference between alternating and direct current; using various electrical formulas to solve problems; wiring thermostats; identifying basic refrigeration components and heating systems.	172014	1	10	
HVACR 1: Students will learn the following: Safety, tubing and fittings; soldering and brazing; running condensate lines using P.V.C. piping; running gas lines using black iron pipe; electrical controls; reading of connection and schematic diagrams; basic refrigeration; AC systems; charging and recovery; vacuum procedures and CFC certification. Students may also participate in house projects, if one is on-going.	17011N	2	11	CTP
HVACR 2: Students will learn the following: Service repair and installation of gas heating; oil heating; electrical heating; heat pumps and boilers; heat load calculation; duct work; air distribution; chimneys, vents and flues; control circuit troubleshooting; accessories and optional equipment. Students will prepare for CFC certification exam. Plumbing will be introduced. Students may also participate in house projects, if one is on-going.	17012N	3	12	CTP

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School of Health, Human and Protective Services

Cosmetology

Criminal Justice

Culinary Arts

Education Careers

Health Occupations

Cosmetology

Cosmetology is governed by the State Board of Cosmetology and prepares students to take the Maryland State Board of Cosmetology Licensure test. It requires competence in the areas of verbal aptitude, perception, motor coordination, finger and manual dexterity. Regular attendance is a critical part of this program as 1,500 hours must be attained prior to graduation to take the State Board exam, which is required. Students are required to take part in public service activities practiced outside the regular classroom. Uniform and fees are required.

Leads to a career as a Licensed Cosmetologist

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	*Math	*Math	*Math	*Math
3	*Earth Science	*Biology	*Chemistry	Cosmetology 3
4	*Local, State, National Gov't.	*US History	*World History	Cosmetology 3
5	Fit for Life	Cosmetology 1	Cosmetology 2	Cosmetology 3
6	Art 1	Cosmetology 1	Cosmetology 2	Cosmetology 3
7	Computer Utilization	Nutrition Tech or Tech Ed elective	Cosmetology 2	Anatomy and Physiology
8	World Language	World Language	Cosmetology 2	Principles of Bus. Manage.

= Required = Recommended

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Cosmetology Course Descriptions

Course	Course #	Credits	Grade	Codes
Cosmetology 1: The first year cosmetology course will expose students to: cosmetology history; professional image; communicating for success; infection control; properties of the hair and scalp; the principles of hair design; shampooing, conditioning and applying rinses; hairstyling principles and practices; manicuring, pedicuring, nail art, nail sculpturing, facials, massaging. In the course of the year, students are expected to take advantage of the opportunity to earn 500 hours towards the amount required for licensing. Hours will be earned in Cosmetology 1 class, and work completed with the Drama Department and Skills USA.	17074N	2	10	
Cosmetology 2: Students will build on and extend the skills gained in the first year course, and work to have accumulated 1,000 hours by the end of the year. After a student accumulates 1,000 hours, s/he is required to work in a salon. Skills taught include permanent waving; hair cutting; removing unwanted hair, chemical hair relaxing; hair coloring; skin and its disorders; nails and disorders.	17075N	4	11	CTP
Cosmetology 3: The senior year concentration is on preparing and taking the state board exam for licensing. Students are responsible to continually review on their own material previously taught. After completing 1,380 hours, students must take the theory state board exam. At the completion of 1,500 they must take the practical board exam. Prior to graduation from high school, in addition to the two required exams, students must complete a cosmetology portfolio, salon management research project, chemistry project, sculpture nail project, and a nail disease research report.	17076N	4	12	CTP

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Criminal Justice

Criminal Justice prepares students for employment in the law enforcement field. The objectives of this course are to encourage law-abiding behavior; to develop informed and responsible citizens; to teach critical thinking and organizational skills; to foster qualities of self-reliance, individual discipline, and leadership. The program prepares students for immediate entry into the private security field, corrections and loss prevention, and provides students with the opportunity to gain valuable experience toward a college degree in law enforcement. Classroom instruction, field trips, and shadowing experiences are all important parts of this course. Uniforms are provided and must be worn twice a week. **Community service is expected.**

Four year college degree pathway: Leads to careers such as police officer, forensic investigator, parole officer, federal law enforcement officer
Two year technical school, apprenticeship or military pathway: Leads to careers such as paralegal, corrections officer, security guard, private investigator, bail enforcer, loss prevention officer

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	*Math	*Math	*Math	*Math
3	*Earth Science	*Biology	*Chemistry	Criminal Justice 3
4	*Local, State, National Gov't.	*US History	*World History	Criminal Justice 3
5	Fit for Life	Criminal Justice 1	Criminal Justice 2	Criminal Justice 3
6	Fine Art Elective	Criminal Justice 1	Criminal Justice 2	Criminal Justice 3
7	Computer Utilization	Computer Apps OR Tech Ed elective	Speech or Elective	Anatomy&Physio., Psych./Soc. Or other Soc.Studies
8	World Language	World Language	World Language	World Language Or Elective

= Required = Recommended

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Criminal Justice Course Descriptions

Course	Course #	Credits	Grade	Codes
Criminal Justice 1: The first year of Criminal Justice, students will be exposed to the foundations of the law enforcement field. They will learn basic military drill and defensive tactics, and will gain and maintain physical fitness, and learn CPR and basic first aid. They will become familiar with the Police Officer Code of Ethics. They will be able to describe and understand the procedural rights in the first, second, fourth, fifth, sixth, eighth, tenth, fourteenth and fifteenth amendments. Distinguishing between criminal and civil laws, knowing the difference between common law crimes, felonies and misdemeanors, and identifying specific crimes are part of this course. Students will also gain a working knowledge of Maryland traffic laws, traffic accident investigation, and traffic direction skills. They will utilize their writing and organizational skills by learning how to produce concise, effective police reports and a notebook similar to the Police Academy notebook.	17090N	2	10	W
Criminal Justice 2: All of the skills obtained in the first year course will be maintained and extended. In addition, students will learn about the American court structure, the juvenile justice system, and the different styles of police patrol. Investigative skills will be taught, including lifting latent lift cards, maintaining a crime scene, producing evidence, maintaining the chain of custody of evidence, obtaining a search warrant. Surveillance types and objectives will be taught. Students will learn about various police related careers, such as undercover agents, arson investigation, hostage negotiator, and will develop a resume and prepare for a job interview. They will also learn to give competent testimony in a courtroom setting.	17091N	2	11	CC,CTP. W
Criminal Justice 3: All the skills obtained in the first and second year courses will be maintained, extended and practiced. In addition, students will learn to write a precise and articulate search warrant and research notorious serial killers. They will identify gang activity, related crimes and efforts to prevent gangs. Defining hate crimes and exploring current trends in crime will also be part of the curriculum. Students will spend time completing internships in various areas of the criminal justice field.	C1792N	4	12	CC,CTP, W

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Culinary Arts

Culinary Arts students will develop a variety of skills relating to food service, including services by restaurants, catering and institutional food providers and other recreational and entertainment venues. Classroom and on-the-job experiences include laboratory, theory, community and shop work as they relate to planning, selecting, purchasing, preserving, preparing and serving food. An emphasis on culinary nutrition will enable students to create successful menus as culinary professionals. Commercial kitchen management, food safety and sanitation, food preparation and presentation will be emphasized. Uniform and fees required.

Four year college degree pathway: Leads to careers such as executive chef, dietician/nutritionist, assistant restaurant manager, food purchasing agent, food services supervisor

Two year technical school, apprenticeship or military pathway: Leads to careers such as sous chef, kitchen manager, pastry prep, garde manger, maitre d', cook

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	*Math	*Math	*Math	*Math
3	*Earth Science	*Biology	*Chemistry	Culinary Arts 3
4	*Local, State, National Gov't.	*US History	*World History	Culinary Arts 3
5	Fit for Life	Culinary Arts 1	Culinary Arts 2	Culinary Arts 3
6	Art 1	First Aid&Safety/ Aerobics, Wt.Train.	Culinary Arts 2	Prin.Bus.Man.
7	Computer Utilization	Nutrition Tech OR Tech Ed elective	Speech or Elective	Anatomy&Physio./ Psych./Sociology
8	World Language	World Language	World Language	World Language Or Elective

= Required = Recommended

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Culinary Arts Course Descriptions

Course	Course #	Credits	Grade	Codes
Culinary Arts 1: The students in the first year program will learn about the history of the food service industry, including standards of professionalism. Other topics taught include: safety and sanitation, including microbiology; tools and equipment; basic cooking principles; the structure and use of the recipe; culinary terms and definitions; food preparation and production; table service; employability skills; and hands on catering. Students will begin their membership in SkillsUSA.	17104N	1	10	
Culinary Arts 2: In the second year, students will review safety and sanitation, weights and measures, cooking principles, culinary terms and definitions. They will extend their knowledge of food preparation and production, including salads, appetizers, cakes, poultry, pastries, preparation of group meals. Employability skills will include working on individual portfolios. Catering will continue on and off premise, and will include preparing staff lunches.	17105N	2	11	CC,CTP, W
Culinary Arts 3: In the last year of the program, the students will review all skills taught in the previous two years. They will also plan menus, and learn how to prepare stocks and sauces, specialty desserts, fish and shellfish, pates, sausages, terrines, and the art of charcutiere and novelle cuisine. Students will also study international cuisine, budgeting, food cost percentage, and inventories. A final project is preparing and serving a seven-course meal.	17106N	3	12	CC,CTP, W

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Education Careers

The Education Careers program prepares future teachers and is aligned with the Maryland Teacher Academy. It focuses on teaching as a profession, human growth and development, learning theory, curriculum and instruction. Internships at the level a student wishes to teach are completed senior year. Students plan and implement curriculum strategies in a supervised preschool and day care facility. Successful completion of all required competencies with 85% or better and a final grade of a "B" or better will meet the training requirements of the Maryland State Department of Education Child Care Administration entry level employment (90 hour equivalent). Completion of all education-related courses with a grade of A or B will permit advanced placement at the College of Southern Maryland in the Early Childhood Degree or Certification Program (articulation EDU 1012, EDU 1013, EDU 1051) and college credit in a Maryland State College Teacher Education Program. Industry Certification: Pra-Pro or Praxis Exam. Uniform and fees may be required.

Four year college degree pathway: Leads to careers such as Pre-K to 12th grade teacher, counselor, administrator
Two year technical school, apprenticeship or military pathway: Leads to careers such as teacher's assistant, daycare manager

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	*Math	*Math	*Math	*Math
3	*Earth Science	*Biology	*Chemistry	*Science
4	*Local, State, National Gov't.	*US History	*World History	Education Careers 2
5	Fit for Life	Human Growth & Development	Education Careers 1	Education Careers 2
6	Fine Arts Elective	Fine Arts Elective	Education Careers 1	Foundations Curr/Instruct
7	Computer Utilization	First Aid&Safety/ Aerobics, Wt.Train.	Teaching as a Profession	Education Aca. Internship
8	World Language	World Language	World Language Or Tech Ed Elective	World Language Or Elective

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Education Careers Course Descriptions

Course	Course #	Credits	Grade	Codes
Human Growth and Development: This course focuses on human development from birth through adolescence. Emphasis is placed on theories of health and safety concerns and contemporary issues. Students explore special challenges to growth and development. They will have opportunities for guided observation of children from birth through adolescence in a variety of settings to help them further understand theories of human development. Students will begin to develop the components of a working portfolio.	120534	1	10	CTP,CC
Education Careers 1: The program prepares high school students for gainful employment in childcare services. The course reviews vocations which require fundamental understanding of human development and behavior through class instruction and participation in the Early Childhood Training Program. Topics to be investigated include: the philosophy of early childhood education, theories of how children grow and develop; physical, emotional, social, creative, cognitive, and communication stages. Also included are planning developmentally appropriate and stimulating activities for young children; safety and sanitation principles; state licensing and regulation requirements; communication skills, classroom arrangement and management.	C1761N	2	11	CC,CTP, W
Teaching as a Profession: This course focuses on the profession of teaching – its history, purposes, issues, ethics, laws and regulations, roles and qualifications. Emphasis is placed on identifying the current, historical, philosophical and social perspectives of American education, including trends and issues. Students will explore major approaches to human learning. Students will continue to develop the components of a working professional portfolio.	120544	1	11	CTP, CC
Education Careers 2: The course provides opportunity for further skill development as an Early Childhood professional for students who have successfully completed the Education Careers I program. Students gain experience in a multi-aged group setting with 2 year old children through 5 year old children. Students will gain experience guiding children during mealtime, nap/rest time, and diapering / toilet learning. Units will include the financial management and operation of a child care center. Special emphasis will be place upon identification of health, safety, and nutritional needs of young children, and the role of the provider in meeting these needs. Students will be trained and certified in Community First Aid, Safety and CPR.	C1762N	2	12	CC,CTP, W
Foundations of Curriculum/Instruction: This course explores curriculum delivery models in response to the developmental needs of all children. Emphasis is placed on the development of varied instructional materials and activities to promote learning, classroom management strategies, and a supportive classroom environment. Students will explore basic theories of motivation that increase learning. Students will participate in guided observations and field experiences to critique classroom lessons in preparation for developing and implementing their own. Students will continue to develop the components of a working portfolio to be assembled upon completion of the internships following INTASC principles.	120564	1	12	CTP,CC
Education Academy Internship: The internship is the culminating course of the Teacher Academy Program. Students will have an opportunity to integrate content and pedagogical knowledge in an educational area of interest. They will have an opportunity to extend and apply their knowledge about teaching in a classroom setting under the supervision of a mentor teacher. The students will complete their working portfolio and present it for critique.	120574	1	12	CTP, CC

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Health Occupations

Health Occupations prepares college-bound students for medical careers. Students will learn to use technology to provide all aspects of health services. The program includes classroom instruction as well as hands-on laboratory and clinical experiences at local health care facilities. Students will also take courses such as anatomy/physiology, nutrition and speech. Students are expected to take multiple science classes including Advanced Placement Biology and Chemistry. Certification as a nursing assistant may be earned. Uniform and fees are required.

Four year college degree pathway: Leads to careers such as nurse, physical therapist, occupational therapist, sports medicine specialist, surgical technologist, physician assistant, paramedic
Two year technical school, apprenticeship or military pathway: Leads to careers such as Licensed Practical Nurse (LPN), medical technician, radiology technician, medical secretary, dental hygienist, pharmacy technician, paramedic, phlebotomist

CLASSES	GRADE 9	GRADE 10	GRADE 11	GRADE 12
1	*English	*English	*English	*English
2	*Math	*Math	*Math	*Math
3	*Earth Science	*Biology	*AP Chemistry OR AP Biology	*Science
4	*Local, State, National Gov't.	*US History	*World History	Health Occupations 3
5	Fit for Life	Health Occupations 1	Health Occupations 2	Health Occupations 3
6	Fine Arts Elective	*Chemistry	Health Occupations 2	Health Occupations 3
7	Computer Utilization	Nutrition Tech OR Tech Ed elective	Speech or Elective	Anatomy&Physio./ Intro. to Biotech.
8	World Language	World Language	World Language	World Language Or Elective

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Health Occupations Course Descriptions

Course	Course #	Credits	Grade	Codes
Health Occupations 1: First year students will discuss and research various health careers and the history of health care. A course in Introduction to Anatomy and Physiology will be taught. Students will be exposed to the following skills: vital signs, height and weight, medical terminology, filing of records. They will also complete a Cardiopulmonary Resuscitation Course though the American Red Cross.	17112N	1	10	CC, W
Health Occupations 2: Students will practice skills related to a variety of health careers and observe and/or perform skills in a clinical setting. Each student is assigned to a variety of health careers in the hospital, nursing home or community setting. Medical terminology, vital signs, basic health care procedures, Cardiopulmonary Resuscitation, First Aid, Geriatric Care, computer and PDA usage, and communications techniques will be part of the course goals during this exploratory phase of the program.	C1713N	2	11	CTP, CC, W
Health Occupations 3: Students will continue to gain experience in a clinical facility and the community. Students taking the Certified Nursing Assistant Examination must complete sixty hours of theory and forty hours of clinical as specified by the Maryland Department of Education and the Maryland Board of Nursing. Students with an overall grade of "B" will receive articulation credit at the College of Southern Maryland.	C1714N	3	12	CC,CTP, W

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For more information, visit the North Point website:

www.ccboe.com/northpoint

or contact

Jane Higdon, Admissions Officer

jhigdon@ccboe.com

301-753-1759