

New Courses for the 2011-12 High School Program of Studies

Course	Prerequisite	Grade	Course Description
Career & Tech Ed			
Architecture	Basic Technical Drawing and Architectural Drawing/CAD	11, 12	This is a 100% computer assisted drawing course. Students learn to customize a menu, to adjust dimensioning variables and to use commands to create, edit, dimension and plot to scale. They are able to create blocks with attributes and to create tiled view ports. They also study and duplicate commercial blueprints. This course is recommended for all students, especially those interested in pursuing an architecture career or major.
Digital Imaging III	Digital I and II	10, 11, 12	This course is designed for students who want an in-depth knowledge of digital photography, design, and the Adobe Creative Suite. Emphasis will be placed on creating a digital portfolio. Students will assist in designing their own projects which align to goals and competencies for learning. Fee \$30.00 for course
Dual Enrollment Web Design - PVCC	Design, Multimedia and Web Tech II - 6631	11, 12	Stresses a working knowledge of web site designs, construction and management using HTML or XHTML. Includes headings, lists, links, images, image maps, tables, forms and frames.
E-Commerce	Marketing I	10, 11, 12	Students receive an introduction to marketing functions and the business plan and study Internet marketing's role in the global economy. Students gain knoweldge of the tools and technqiues used in Internet marketing and learn how to design a Web site. They explore ethical, legal, and security aspects and prepare for a career in Internet marketing. Academic skills (mathematics, science, English, and history/social science) related to the content are a part of this course. Computer/technology applications supporting this course are studied.
Filming and Digital Video Editing	TV Production I or Digital Imaging Technologies	10, 11, 12	Students leaern basic camera movements, operations and shots used in studio shooting, use and implementation of the action line, care and maintenance of the digital video camcorder, the importance of video logs, interpretation of storyboards into camera shots and movements and basic editing techniques. this course covers video editing techniques using Final Cut pro, After Effects Garage Band, motion and more to create short films and videos. *(This course will cover all workplace readiness skills mandated by the Commonwealth)
Hospitality, Tourism, and Recreation	None	All	Students focus on developing professional skills and using emerging technologies to prepare for diverse, global, career opportunities. The program offers instruction in the industries of food and beverage, travel and tourism, recreation and fitness, and lodging. The course will consist of classroom instruction and supervised on-the-job training if a cooperative education placement is available.
ITE 119 - Information Literacy (PVCC)	Satisfactory COMPASS score and PVCC Application	10, 11, 12	Covers the information literacy core competencies focusing on the use of information technology skills. Skills and knowledge will be developed in database searching, computer applications, information security and privacy and intellectual property issues. Satisfies ITE 119 requirement for 10 of the Associate Degree Transfer programs at PVCC. Credit may be also transfer to many 4-year colleges/universities. Check the transfer guide for the specific college/university you may be attending.
ITE 120 - Information Literacy (PVCC)	Satisfactory COMPASS score and PVCC Application	10, 11, 12	Provides an overview of the fundamentals of computer information systems. Focuses on the role of computers in business today including hardware, software, analysis, design and implementation of information systems. Includes an introduction to computer ethics and business and personal security. Exposes students to techniques used in programming and system deveopment. Utilizes a hands-on component for spreadsheets, databases and web design applications. Satisfies ITE 119 or ITE 120 requirement for 11 of the Associate Degree Transfer programs at PVCC. Credit may also transfer to many 4-year colleges/universities. Check the transfer guide for the specific college/university you may be attending.

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Medical Terminology	Health & Medical Sciences	10, 11 ,12	Medical Terminology is designed to help students learn health care language. Topics are presented in logical order, beginning with each body system's anatomy and physiology and progressing through pathology, diagnostic procedures, therapeutic interventions, and finally pharmacology. Students learn concepts, terms and abbreviations for each topic.
PVCC Applied Management Principles, BUS 202	Principles of Mgmt	12	This course focuses on management practices and issues; may use case studies and/or management decision models to analyze and develop solutions to management problems.
PVCC Principles of Management, BUS 200	Bus Mgmt recommended	12	This course offers instruction in management and management functions including planning, organizing, directing, and controlling. Students will apply management principles to realistic situations managers encounter as they attempt to achieve organizational objectives.
Service Leadership	None	All	Students will gain an in-depth understanding of local issues and will get involved in the community. Classroom: understanding social problems, impact of policies. Guest Speakers: local leaders and academics. Service Learning Projects: Students will be expected to become leaders in the school and community and to get involved in the issues that matter to them. Modeled after the John Hopkins Center for Talented Youth's Civil Leadership Institute. Open to all students.
English			
Myth and Fantasy: Elements of Culture	English 9	10, 11 ,12	Throughout the course, students will work to better themselves as readers and writers, turning out quality final products. We expect all Murray students to develop a love of reading and writing and to successfully pass the state Standards of Learning Exams in English in 11th grade, entering college or the business world with confidence in their language skills. Students will be invited to focus on the development of voice, style, and documentation in their writing, with an eye toward publication before graduation from high school.
Seriously Funny: A Study of Shakespeare's Comedies	English 9	10, 11 , 12	The business of this course is to tease out the distinction between laughter and comedy by examining Shakespeare's use of laughter-evoking scenes with dramatic story-telling. Further, students will explore Shakespeare's comedies to discover how he uses the comedic form to articulate his vision of human nature and society.
Women in Art and Literature	None		Students study a selection of female authors, poets, and artists from various cultures and time periods. They analyze the development of common themes and study the ways women revolutionized particular genres within their historical context. The class will be an open forum for discussion and interpretation. Students write informal and formal pieces in response to text.
Fine Arts			
Advanced Functional Ceramics	Ceramics IV	11, 12	This course, offered for advanced students who have completed Ceramics I-IV and wish to continue the study of ceramics at a higher level, is designed to encourage personal creative growth through experimentation with innovative functional ceramics processes and techniques not taught in previous courses. The course is devoted to functional ceramics with emphasis on the ceramests develoment of voice and themes in functional ceramic expression honing previously learned and new technical skills, creating and mixing glazes appropriate for functional ceramics and participating in both formal and informal critiques at the advanced level.

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Advanced Sculptural Ceramics	Ceramics IV	11, 12	This course, offered for advanced students who have completed Ceramics I - IV and wish to continue the study of ceramics at a higher level, utilizes non-functional sculptural problems to encourage and develop personal creative growth through innovative sculptural ceramics processes and techniques not taught in previous courses. The course is devoted to sculptural properties with the emphasis on the ceramist's development of voice and themes in non-functional, sculptural ceramic expression honing and developing previously learned and new technical skills unique to sculpture, experimenting with surface design as it relates to sculptural ceramics including use of technological advance and mixed media, developing and mixing glazes appropriate for sculptural ceramics and participating in both formal and informal critiques at the advanced level.
Ballet	None (previous dance training preferred)	All	Will offer students a sound technique and base to understanding and performing dance and ballet. Not only will this course offer a daily ballet class (strenuous workout/physical activity) but students will be introduced to dance through performance (end semester dance production), understanding cultural context and history of dance, judgment and criticism of dance and aesthetics. Students will develop skills for expressive artistic dance performance. Course could be for students of diverse ability.
Film Study	None	10, 11, 12	This course will provide an insight into film as an art form, both in terms of culture and entertainment. Students will study the films of Hitchcock, Spielberg, Blake Edwards, Zemeckis, Jewison, Redford, Kurosawa, Frankenheimer, Pollack, Curtiz and many more. Film genres include: animation, mystery, thrillers, action films, classics, comedies and foreign films. Students are graded on class participation and an optional project.
Guitar	None	All	This course will be open to any student who is interested in learning guitar. It will be self-paced to allow for different levels of proficiency. There will also be performance opportunities available.
History of Musical Theatre	None	All	Students study the origin and development of musical theatre over the past 100 years beginning with vaudeville and silent movies. Theatre enthusiasts, Broadway lovers, and potential spring-play participants will benefit from the course.
Improvisation and Comedy	None	All	We will study the history of improvisation from Commedia Dell'Arte to the present unscripted films of Christopher Guest. We will also study the modern schools of Improvisation: Viola Spolin, Augusto Boal, Del Close. We will work with long and short form improv and examine comedy across cultures. What is funny? Why do some groups of people find certain things funny? We will analyze comedy of the past fifty years, beginning with the sketches of Elaine May and Mike Nichols, Sid Caesar and your Show of Shows, Lucille Ball, Woody Allen, through the sketch comedy of Saturday Night Live. We will write and perform our own sketch comedy as well as learning the basic and more complex skills involved in improvisation.
Music Theory AP	Music Theory or 3 years music performance	All	Will help students understand concepts and applications in music. Students will read and recognize musical concepts, understand musical notation, and employ technology for meaningful expression in music.
Photography IV	Photography III	All	Advanced photography students continue developing photography and photo altering techniques using Photoshop and other programs. Students work at an independent level to create a professional level portfolio while applying techniques for personal creativity.
Printmaking I	Art I	All	Printmaking will emphasize the graphic arts through the use of various print techniques such as: monotype, lithography, wood block, linoleum, intaglio (engraving), and silkscreen. The application of the principles and elements of design will provide the structure for learning about printmaking. Skills that involve the use and care of various tools for carving and cutting will be taught, as well learning how to use a printing press.

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Health & PE			
Introduction to Coaching	Health & PE 1 & 2	11, 12	Students will learn the basic coaching principles for various sports from youth through high school level. Students also will learn basic sports rules and good sportsmanship behavior. They will develop daily practice plans and season schedules, and learn to communicate effectively and professionally with athletes and parents. Students will interview a variety of coaches and perform volunteer coaching.
Physical Ed. III	PE 1 & 2	11	Students will apply principles and concepts while mastering movement skills in an area of physical education. Students will design and implement a fitness program to support their area of concentration.
Physical Ed. IV	PE 3	12	Students will apply principles and concepts while mastering movement skills in an area of physical education. Students will design and implement a fitness program to support their area of concentration.
Mathematics			
Honors Trigonometry	Algebra II	All	The course involves a comprehensive study of trigonometric definitions, applications, graphing, and solving trigonometric equations and inequalities. There is additional emphasis on oral and written communication related to the language of mathematics, logic of procedure, and interpretation of results. Students use graphing calculators, computers and other materials in learning activities. Further, graphing utilities enhance students' understanding of realistic applications through modeling and aid in the investigation of trigonometric functions and their inverses. They also provide a powerful tool for solving/verifying trigonometric equations and inequalities.
Science			
Biology (Virtual)	None		This course will help students understand the natural world with an emphasis on developing the skills necessary for further science study. Biological science themes focus on four major areas: the science of life; genetics, evolution and classification; the human body; plants, diversity and ecology. The importance of scientific research that validates or challenges ideas is emphasized. This includes collecting, analyzing and reporting data from controlled experiments and media resources. All students will take the biology SOL test. Students will interact online with the course instructor, complete independent laboratory exercises, including online and wet labs, and will collaborate with their peers online.
Biology - Ecology Cooperative	None	10, 11, 12	Combines the curriculum of Biology I and Biology II - Ecology. Students will learn the concepts of Biology and Ecology using hands-on activities and labs. This course will provide students the opportunity to receive 2 science credits and an additional verified Biology credit. The Ecology curriculum will reinforce the concepts begin taught in the Biology curriculum. Students will gain knowledge from the cell to the ecosystem throughout the year.
Chemical Quantitative and Qualitative Analysis	Algebra II & Chemistry	11, 12	Students learn the chemistry and laboratory techniques used in chemical quantitative and qualitative analysis. They use milligram balances, spectrophotometers, pH meters, potentiometers, centrifuges, vacuum filtration apparatus, distillation apparatus, and graphing calculators, and apply statistical measures to their findings. Students communicate results through oral and written reports.
Geology - Earth Science Cooperative	None	All	Offers a foundation in the study of the geologic processes that have formed our world and the scientific skills used to observe and interpret it. In this laboratory course, students will learn to use and apply the vocabulary and technology of the geologist and earth scientist. The following topics will be covered: longitude and latitude, topographic maps, Earth's structure, plate tectonics, minerals, rocks, Virginia's geologic provinces, natural resources, weathering erosion, soils and natural resources and comparative planetary geology.

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Geology - Earth Science Cooperative	None	All	Offers a foundation in the study of the geologic processes that formed our world and the scientific skills used to observe and interpret it. Through an appreciation of earth's systems, students will be encouraged to be responsible citizens. This is a laboratory course in which the students will learn to use and apply the vocabulary of geology, oceanography, meteorology and astronomy. Through this course, students will have the opportunity to earn 2 science credits and a verified Earth Science credit.
Introduction to Scientific Research	Algebra II (concurrent)	All	Students develop scientific research strategies to facilitate entering competitions such as the International Science and Engineering Fair and Virginia Junior Academy of Science. Students and Research: Practical Strategies for Science Classrooms and Competitions provide the class sequence and activities. The work of Julia Cothron, Virginia Mathematics and Science Center, Dr. Richard Rezba, Virginia Commonwealth University, and Dr. Ron Giese, College of William and Mary provide the course fundamentals.
Meteorology	None	10, 11, 12	The course covers the composition and structure of the atmosphere, flows of atmospheric energy, and resulting motions produced from small to planetary scales. Instruction stresses the physical principles of atmospheric phenomena and their impacts on humans. Students examine current meteorological data to develop analytical methods.
Nuclear Issues	None	11, 12	The course traces the development of nuclear weapons, the peaceful uses of nuclear energy, nuclear proliferation, nuclear power plants, nuclear waste storage and disposal, and the reality of resolutions of dirty bombs.
Physical Oceanography	Earth Science & Algebra II may be concurrent)	11, 12	This course focuses on world oceans' physical characteristics including the formation of oceans, ocean floors, ocean circulation, wave characteristics, tides, seawater properties, and coastal dynamics. Students learn the history of oceanography such as modern oceanographic expeditions, discoveries and the JASON project. They also study related environmental issues.
Social Studies			
American Civil War	World History & American History	All	The course focuses on the sectional crisis, 1860 election, southern states secession, military strategy and tactics, weapons, battles and leaders, common soldier's life, women's roles, diplomacy, King Cotton and Wheat, war politics, economics of growth and destruction, emancipation, life behind the lines, victory and defeat.
American Involvement in Vietnam	None	11, 12	Students investigate the roots of American involvement in the Southeast Asia war, the protests it provoked on the home front, and the experiences of the armed forces collectively and individually. Students further study the complex pattern of geopolitical domination of Indochina and Vietnamese nationalism. They will identify significant American foreign and domestic policy trends as evident with Southeast Asia's relationship with America.
AP Comparative Government and Politics	World History	11, 12	Students acquire a theoretical framework to compare international political systems. The course follows the AP curriculum focusing on the history, politics, and institutions of six countries: Britain, Russia, China, Mexico, Iran and Nigeria. Students prepare to take the spring AP exam. Additionally, this course guides students' participation in the global community and economy.
AP Human Geography	Social Studies	All	AP Human Geography provides a rigorous curriculum that introduces students to the systematic study of patterns and processes that have shaped human understanding, use, and alteration of Earth's surface. Students employ spatial concepts and landscape analysis to examine human social organization and its environmental consequences. They also learn about the methods and tools geographers use in their science and practice. Students will engage in various class discussions and complete many different forms of writing assignments that demonstrate their understanding of the world and human interaction with the environment.

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AP Macro Economics	World History	10, 11, 12	Instruction provides a comprehensive understanding of the economics principles applicable to individual decision makers and an economic system. Topics include: nature and functions of product markets; factor markets; role of government in promoting economic efficiency and equity; national income; price-level determination; economic performance measures; financial sectors; stabilization policies; economic growth; and international economics.
Issues of the Modern World	World History II	11, 12	Both the students and teacher contribute to determining the course content. Teacher instruction may include: current events and topics in global and American society and politics; modern, global economic issues; modern terrorism, its roots, causes, examples and reactions; Twentieth and Twenty-first Century nationalism; and the changing relationship between contemporary developed and developing nations. Students select areas to research and analyze from class discussions of world history and modern society topics, issues and contemporary developments. The course includes a significant student-directed research and analysis component.
World History II (Virtual)			The focus of this course is the examination of world history starting with the European Renaissance and ending with contemporary issues, with an emphasis both Western and non-Western civilizations. Students will work on refining skills of oral and written communication and the analysis of data including primary and secondary sources. All of the instruction for this course will be delivered in a virtual online environment with assessments administered in a traditional and supervised setting. Students will collaborate with the instructor and other students online.
World Languages			
Advanced Spanish Conversation, Composition and Culutre through Film Study	Spanish IV	10, 11, 12	Students will view, discuss and analyze a variety of Latin American and Spanish films as the impetus for studying and discussing cultural conflict, including identifying a person's identification with his heritage, a study of immigration, cultural issues that have led to war, and the value of life and friendship. In addition to viewing several films on each aspect of the theme, students will investigate authentic resources or pieces of literature that will round out their understanding of the situations under investigation and provide further stimuli for discussion.
German Inventors, Movers, and Shakers	German I and II	9, 10, 11	Open to students who have completed German II, this elective will provide oppportunities for students to increase their German speaking, reading, writing, and listening proficiency, as well as increasing their active vocabulary, through daily conversation and the study of German inventors and other German movers and shakers. It will act as a bridge course for students between years of German who want to continue their study of German and begin to delve inot the importance of German historical figures. Class will be conducted in German.
Germany from 800 AD to the Present	German IV	10, 11, 12	A survey of German history and culture, up to and including modern day current events, politics, and issues affecting Germanyand other German speaking countries, including literature, art, music, and contributions made by Germans over the centuries to the present day. A companion class to German 4 or A.P. German, taken in conjunction withit ona 4 by 4 or AB schedule, it will prepare students both for the A.P. examination and for german study in college and will be an excellent resource for students interested in German culture, history, art, literature, music, film, and German language development.

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Germany from the Beginning of the 20th Century to Today	German 1, 2, 3	10, 11, 12	An in-depth look at issues affecting Germany today, concentrating on current events, history, culture, literature, art, music, film, politics, and social issues. This elective can either replace or be collapsed together with the first history proposal and taught with A.P. German as a companion class on the AB schedule. As a semester course it will be open to students who have completed German III or German IV and will help to better prepare students for both AP German and for further German study in college. Class will be conducted in German.
Sign Language	Dept. Recommend	All	The course introduces American Sign Language (ASL) fundamentals as used by the deaf community. It includes basic vocabulary, finger-spelling, numbers, syntax, and grammatical non-manual signals. Emphasis is on communication competence. Students also will acquire cultural knowledge and understanding of the deaf community. This course does not substitute for a World Language graduation requirement.
Spanish Conversaton and Writing for the Business world	Spanish Elective	All	This multi-disciplinary way to develop oral and written language fluency is geared to the world of work. Students will prepare business letters, learn office procedures, and develop specific vocabulary for working in the helth care, law enforcement, educational and other business settings
AF ROTC			
AF ROTC Raiders Program	Enrollment inf AFJROTC I, II,III, or IV & 1 year of the AFJROTC Drill Only Class	10, 11, 12	Students will learn advanced military physical fitness, first aid, land navigation, rope bridge/swiss seat construction, development of individual training techniques, team building, leadership skills, and project management. Participants will be able to demonstrate the ability to use leadership and interpersonal skills to develop a cohesive team of four to twelve students. Students will develop a team exercise plan, and participate in a structured physcial fitness regiment coupled with a variety of team buiding physical fitness activities and exercises. Students will train others in land navigation, self aid and buddy care (first aid), rope bridge/swiss seat construction and command group of students through a raiders' competition. Students enrolled in the Raiders Program are eligible to participate on the AFJROTC competitive Raiders Team. Students must be concurrently enrolled in one of the following AFJROTC classes: AFJROTC I, II, III, or IV
MESA			
EGR 240 Solid Mechanics (Statics)	Math 173 (Calculus), EGR 115		This course will cover basic concepts of mechanics, systems of forces and couples, equilibrium of particles and rigid bodies, and internal forces and analysis of structures. Also includes trusses, frames, machines and beams, distributed forces, friction, centroids, and moments of inertia. This course will be a DE course with PVCC and be transferable to all in-state Engineering schools.
Politics, Science and values	Co-Requequisite - Math 173 (Calculus)		This course will introduce a wide variety of domestic policy issues and explore the political process and how scientific evidence, research and societal norms impact public policy. This course will include topics in government, engineering, science, statistics, philosophy and sociology. Students will write a minimum of 6 papers, make 3 presentations and have a final for the course.