

2014-2015 POS New Courses

School	Dept	Title	Credits	Description
MoHS	CTE	Introduction to Digital Music	1	In this course, students work collaboratively and independently on digital media projects with a focus on electronic music. Students learn the basic principles of a wide range of topics, including songwriting, midi omposition, video editing, business and marketing, networking, etc. Students in this course independently design creative projects throughout the semester and leave with a fundamental understanding of how to build, manage, and utilize a modern music studio.
MoHS	CTE	Digital Music Collective	1	In this course, students work collaboratively to develop a portfolio of digital music projects. Students continue to develop songwriting skills and work independently to create projects that involve a wide range of digital media based arts.
MoHS	CTE	PVCC EGR 115: Engineering Design	1	This course allows students to examine systems, the interaction of technology and society, ethics in a technological world, and the fundamentals of modeling while applying the engineering design process to areas of the designed world. Students will participate in handson projects in a laboratory setting as they communicate information through team-based presentations, proposals, and technical reports. Students will learn the principles of orthographic projection and multiview drawings. Other topics will include descriptive geometry with relationships of points, lines, and planes. Sectioning, dimensioning, and computer graphic techniques will be introduced.
MoHS	CTE	Micro Power Systems	1	Development of portable and sustainable micro power systems for a variety of economic development support activities. Engineering. Advanced Manufacturing. Fuel Science and Environmental Sciences are all involved I
MoHS	CTE	PVCC EGR 120: Intorduction to Engineering	1	This course allows students to examine systems, the interaction of technology and society, ethics in a technological world, and the fundamentals of modeling while applying the engineering design process to areas of the designed world. Students will participate in hands-on projects in a laboratory setting as they communicate information through team-based presentations, proposals, and technical reports. This course is dual enrolled with PVCC as EGR 120 Introduction to engineering. EGR 120 is an introductory level engineering class designed to introduce students to ideas, concepts, and methods universal to all disciplines of engineering. Engineering design, analysis, and teamwork will be emphasized through a semester-long project involving the Lego® Mindstorms Robot. In addition to problem solving, this class will emphasize important skills that will be useful to students throughout their careers including technical documentation, presentation skills, and the use of software-based computational tools for solving engineering problems.
MoHS	CTE	PVCC BUS 241 Business Law I	1	Develops a basic understanding of the US business legal environment. Introduces property and contract law, agency and partnership liability and government regulatory law. Students will be able to apply these legal principles to landlord/tenant disputes, consumer rights issues, employment relationships and other business transactions.
AHS, WAHS	CTE	Robotics and Automation	1	Robotics and Automation is a lab based course that uses a team-based approach to intoduce the basic concepts of robotics, construction and programming of autonomous and semi-autonomous robots. The course will focus on careers in engineering, robotics, programming and game design. Course instruction will primarily be tied to lab experiements as students will work collaboratively to build and test increasingly mre complex robots. Students will compete at various robotic competitions primarily using the VEX and NXT robotic platforms
WAHS	CTE	Recycled Materials and Processes	1	Students focus on recycled, reclaimed, and sustainable industrial/technical materials and processes as they fabricate usable products and conduct experiments. This laboratory course is recommended for students interested in technical fields.
WAHS	CTE	Engineering Research I	1	Students will develop strong research and analytical skills through hands-on experiences. Experiments will be in a variety of science disciplines with a focus on data collection, validation and analysis. A project suitable for a science/engineering event will be required for first semester. The second semester will explore engineering principles and techniques.
WAHS	Science	Earth Science (Oceanography, Meteorology, Astronomy and Meteorology)	1	This course explands three of the four major concepts of Earth Science stressing Oceanography, Astronomy, and Meteorology. The primary objectives are to enhance the student's understanding and appreciation of the Earth's systems, and through this knowledge, to encourage students to become responsible citizens. Students will learn about the physical environment and environmental issues facing the world in these disciplines. Laboratory experiments are used to teach conceptual themes.

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WAHS	Science	ESA World Geography: Physical and Human	1	World Geography provides a rigorous curriculum that introduces students to the study of patterns and processes that have shaped human understanding, use, and alteration of the Earth's surface. The content and perspectives of the course
WAHS	Science	ESA Geology	1	Geology offers a foundation in the study of geologic processes that have formed our world and the scientific skills used to observe and interpret it. In this laboratory course, students will learn about the Earth's structure, plate tectonics, minerals, rocks, Virginia's geologic provinces, natural resources, weathering, erosion, soils and natural resources, and comparative planetary geology.
ACPS	Science	AP Physics 1	1	AP Physics 1: Algebra-Based is the equivalent to a first-semester college course in algebra-based physics. The course covers Newtonian mechanics (including rotational dynamics and angular momentum); work, energy, and power; mechanical waves and sound. It will also introduce electric circuits. AP Physics 1 can be taken as a first-year physics course.
ACPS	Science	AP Physics 2	1	AP Physics 2: Algebra-Based is the equivalent to a second-semester college course in algebra-based physics. The course covers fluid mechanics; thermodynamics; electricity and magnetism; optics; atomic and nuclear physics. AP Physics 2 presumes successful completion of AP Physics 1 or its equivalent.
WAHS	Science	Introduction to Environmental Studies	1	Introduction to Environmental Studies is an elective course for all students in the Environmental Studies Academy. This course introduces students to various career options available in the broad field of environmental studies. Pathways and academic planning are centered around weekly spotlights that focus on utilizing community resources and experts in their fields that can highlight potential careers. Students will engage in discussions and debates on local, regional and global environmental issues building a greater understanding of citizenship and stewardship responsibilities.
MoHS	Fine Arts	Treble Jazz III	1	Same as Treble Jazz II with advanced student proficiency expected.
WAHS	Fine Arts	PVCC Drawing 121/122	1	Students will develop basic drawing skills and understanding of visual language through studio instruction /lecture. Concepts including proportion, tone, space, perspective, and composition as applied to all drawings including still life, landscape and the human figure will be introduced, A variety of media including pencils, charcoal, ink and various color media will be applied in conventional and unconventional ways. Critiques, art exhibitions, field trips and gallery/museum visits as appropriate.
WAHS	Fine Arts	PVCC Music Appreciation MUS121	1	Music Appreciation intends to guide the student to learn and experience music from a different perspective - from the eyes of a true musician. Students will learn about the history of western music, the social context in which music takes place, music notation, and the culture of performance.
AHS, WAHS	Fine Arts	Filmstudies/Film making II	1	Students in Filmmaking II will explore advanced elements of the art of digital video production. With a focus on advanced techniques in lighting, composition, editing, and sound engineering, students of the course will experience all aspects of completing a high quality narrative or documentary film. Special emphasis on commercial film and the business of filmmaking will round out the course. Internships with local filmmakers and production companies will be available as an option for advanced filmmaking students.
AHS	Fine Arts	Game Studies	1	This course aims to explore video games through a literary, analytical lens. Students should have some familiarity with gaming and also be interested in a critical study of games. We will be examining literary aspects of various games, including genres, plot design, characters, and more through game play written critiques and discussions. Our study of games will ask what makes a game great in order to prepare for the spring semester project: creating a concept for each student's own game. It is expected that students will be able to play games at home, although the focus will remain on in-class analysis.
AHS	Fine Arts	Life in the Garden	1	Life in the Garden will be a cross curricular course that addresses the concept of garden, both from the perspective of it as an iconic symbol that appears in art, mythology, literature, architecture, and music as well as its more literal sense, studying the range of gardens that are part of the contemporary world. Using multiple modalities and cooperative learning, students will research diverse gardens and gardening practices. This will include a scientific approach to soil analysis and irrigation as well as the cultivation of a student created garden.

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MoHS	HMSA	HMSA Junior/Senior (Internship)	1	Internships are designed to support a student's long-term education and career goals. Students will work closely with professional mentors and will have the opportunity to experience "first-hand" a particular career or pathway. Students can enhance their academic and technical skills and become more informed about certain career field expectations and requirements prior to entering college and/or the workforce. Students will meet with the HMSA Director to determine placements suitable for their career goals.
MoHS	HMSA	HMSA Independent Research Project	1	Independent Study provides the opportunity for students to investigate a topic of personal interest that is outside the scope of current course offerings. Mentors for independent study can be school faculty or community members. Research project proposals will be submitted to the HMSA Director and should include a commitment from a mentor and a plan for carrying out the independent study.
WAHS	Math	PVCC MTH157 Elementary Statistics	1	Students will learn elementary statistical methods and concepts including descriptive statistics, estimation, hypothesis testing, linear regression, and categorical data.
WAHS	PE	Team Sports	1	The purpose of this course is to provide learning experiences that will lead to the development of the basic skills in various team sports. The units may include basketball, volleyball, flag football, soccer, speedball, and softball. Content will include game strategies, fundamental skills, history, rules, safety, officiating, drills and mini-games. Upon completion of the course, students will be able to demonstrate basic skills in selected sports, demonstrate knowledge of history, rules, safety and will be able to demonstrate team play concepts and strategies in game situations. Fee apply for this course. NOTE: This course may NOT substitute for PE I or PE II as a graduation requirement.
AHS	World Languages	Attic Greek: Language and Culture	1	This course will engage all learners in studies of Greek history, philosophy, mythology, art, and architecture emphasizing cross discipline connections to these subject areas. A quick-paced acquisition of reading skills and vocabulary (particularly scientific terminology) in Attic Greek is central to this course. Students will create and expand partnerships using interdisciplinary connections. This course is taught at an academic level and should be considered an elective rather than a language; however, there will be a heavy language component to the course.
WAHS	Social Studies	Psychology Applications and Research	1	This course provides students the opportunity to continue their study of topics introduced in AP Psychology with added emphasis on independent research and the study of current advances in the field. Students will form research groups that select one general topic (e.g., learning, developmental psychology, social psychology) each quarter to study in greater depth. They will then narrow their focus to a specific application and will conduct research using one of the methods psychologists typically employ (e.g., observation, survey, field or lab experiments.) The groups will collect data, analyze the results, and report their findings following the American Psychological Association guidelines.
AHS	Social Studies	Ethnic Studies	1	The study of the history of people of color in America from the perspective of people of color, who are often mis-represented or under-represented in American History classes. Ethnic Studies focuses on the lives of African-Americans, Latinos/as, Asian-Americans, Native Americans and those Americans of Middle Eastern descent. Our focus in this class will be on the similarities between the communities and their struggles for equality in America. Ethnic studies educates students about our similarities and differences, teaches us to affirm those similarities and respect those differences, creates an atmosphere of acceptance, understanding and cooperation in our communities.
ACPS	SPED	Algebra I, Pt 1	1	Part I is the first year course for Algebra I. This is an individualized and comprehensive course that covers the concepts and skills necessary to be successfully complete both parts of Algebra I. If a student with disabilities is eligible for credit accommodations, successful completion of this course will result in the student being awarded one (1) math credit.
ACPS	SPED	Algebra 1, Pt 2	1	Part II is the second year course for Algebra I. This is an individualized and comprehensive course that covers the concepts and skills necessary to be successfully complete both parts of Algebra I. If a student with disabilities is eligible for credit accommodations, successful completion of this course will result in the student being awarded one (1) math credit, the second Math credit in this sequence.

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School	Dept	Title	Credits	Description
ACPS	Math	Algebra I, Pt 1	1	Part I is the first year course for Algebra I. This is an individualized and comprehensive course that covers the concepts and skills necessary to be successfully complete both parts of Algebra I. Successful completion of this course will result in the student being awarded one (1) elective credit.
ACPS	Math	Algebra 1, Pt 2	1	Part II is the second year course for Algebra I. This is an individualized and comprehensive course that covers the concepts and skills necessary to be successfully complete both parts of Algebra I. Successful completion of this course will result in the student being awarded one (1) math credit, the second Math credit in this sequence.
ACPS	Math	PVCC MTH 166 Precalculus	0.5	Covers topics in algebra such as equations and inequalities, graphing and functions, exponents and logarithms, systems of equations, inequalities linear programming, and matrices.
ACPS	Math	PVCC MTH 171 Applied	0.5	Covers topics in applied calculus for business, life sciences, and social sciences. It includes description and application of functions, limites, deriviatives, graphing, and integrals.
AHS	Math	PVCC MTH 277 Vector Calculus	0.5	Presents vector valued functions, partial derivatives, multiple integrals and topics from the calculus of vectors. Includes Greens theorem, Stokes theorem and the Divergence theorem. Designed for mathematical, physical and engineering science programs.
AHS	Math	PVCC MTH 279 Ordinary Differential Equations	0.5	Introduces ordinary differential equations. Includes first order differential equations, second and higher order ordinary differential equations with application. Also includes Laplace transforms and introduces eigenvalues and eigenvectors in solutions of systems. Designed for mathematical, physical and engineering science programs.