

**MCPS COURSE CATALOG 2016-2017**  
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**Revisions in Red**

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**MCPS COURSE CATALOG 2016-2017**

**Courses will be offered based on student interest and teacher availability.  
Per MCPS Policy 6-6.2, only full credits will be accepted. W=Weighted Credit**

**NO CREDIT COURSES**

The following courses are available for use at the building level with permission from the Director of Secondary Education.

**00001 Late Arrival** **No Credit**  
**00004 Early Release** **No Credit**

These courses are approved at the discretion of the building principal for seniors who have met graduation requirements.

**01010 Student Aide** **No Credit**

This course is approved at the discretion of the building principal for students who do not wish to take a full course load and who wish to provide assistance to a teacher, the guidance office, the main office, athletic trainer, etc.

**01011 Study Hall** **No Credit**

This course is approved at the discretion of the building principal for students who are taking a combination of 3 or more Advanced Placement and/or Dual Enrollment Courses.

**ENGLISH**

**11300 ENGLISH 9** **One English Credit**

In this course students will apply knowledge of literary terms and forms to their reading and writing and to analyses of literature and other printed materials. They will be introduced to literary works from a variety of cultures and eras. Students will continue to develop their reading comprehension skills through utilizing strategies to identify formats, text structures, and main ideas. Students will write narrative, literary, expository, and informational forms. They will develop as writers by participating in a process for writing, including prewriting, organizing, composing, revising, editing, and publishing.

**PA1130 ENGLISH 9 PROJECT AIM** **One English Credit**  
Same as 11300 except the course is taught through Project AIM.

**1130V VIRTUAL ENGLISH 9** **One English Credit**

Same as 11300 except the course is delivered virtually. In order to complete the virtual class, students will "attend" an established lab time in their home school, unless scheduled as a "0" period or "8<sup>th</sup>" period. Students will have daily online access to the teacher and limited tutorial help in the lab. Because virtual education is an independent self-paced course, successful students will possess the ability to effectively organize and manage time.

**1130H ENGLISH 9 HONORS** **One English Credit**

This course incorporates the English 9 curriculum and is designed for students who have displayed excellence in previous English courses and are eager to put forth the time and effort to meet the demands of a more accelerated course.

**11400 ENGLISH 10** **One English Credit**

In this course students will read, comprehend, critique, and analyze a variety of literary works. They will interpret a variety of informational materials and apply critical reading skills across the content areas. Students will develop their expository writing skills and learn effective techniques of organization and development. Students will apply the writing process in developing written products and will edit writing for correct use of language, sentence formation, punctuation, capitalization and spelling.

**PA1140 ENGLISH 10 PROJECT AIM** **One English Credit**  
Same as 11400 except the course is taught through Project AIM.

**1140V VIRTUAL ENGLISH 10** **One English Credit**

Same as 1140 except the course is delivered virtually. In order to

complete the virtual class, students will "attend" an established lab time in their home school, unless scheduled as a "0" period or "8<sup>th</sup>" period. Students will have daily online access to the teacher and limited tutorial help in the lab. Because virtual education is an independent self-paced course, successful students will possess the ability to effectively organize and manage time.

**1140H ENGLISH 10 HONORS** **One English Credit**

This course incorporates the English 10 curriculum and is designed for students who have displayed excellence in previous English courses and are eager to put forth the time and effort to meet the demands of a more accelerated course.

**11500 ENGLISH 11** **One English Credit**

In this course students will enhance their appreciation for literature by studying American literature, both classic and contemporary. They will read a variety of literary genres and informational texts to identify the prevalent themes in American literature that are reflective of American history and culture. Students will write in a variety of forms with an emphasis on persuasive essays and professional correspondence. Additionally, students will engage in research that requires the selection, evaluation, use, and documentation of a variety of sources. Each student will present a research product that is clearly written and accurately documented. **NOTE:** Students will be required to take the Writing and the Reading SOL tests related to this course. Both reading and writing must be passed prior to graduation.

**PA1150 ENGLISH 11 PROJECT AIM** **One English Credit**  
Same as 11500 except the course is taught through Project AIM.

**1150V VIRTUAL ENGLISH 11** **One English Credit**

Same as 11500 except the course is delivered virtually. In order to complete the virtual class, students will "attend" an established lab time in their home school, unless scheduled as a "0" period or "8<sup>th</sup>" period. Students will have daily online access to the teacher and limited tutorial help in the lab. Because virtual education is an independent self-paced course, successful students will possess the ability to effectively organize and manage time.

**11600 ENGLISH 12** **One English Credit**

In this course students will analyze British literature and literature of other cultures. In addition, students will read informational and technical texts and continue to develop their own reading-process skills. Students will apply these reading skills in other content areas. Students will produce informational and expository papers that are logically organized and contain clear and accurate ideas. They will produce well-documented research papers, using a standard method of documentation.

**PA1160 ENGLISH 12 PROJECT AIM** **One English Credit**  
Same as 11600 except the course is taught through Project AIM.

**1160V VIRTUAL ENGLISH 12** **One English Credit**

Same as 11600 except the course is delivered virtually. In order to complete the virtual class, students will "attend" an established lab time in their home school, unless scheduled as a "0" period or "8<sup>th</sup>" period. Students will have daily online access to the teacher and limited tutorial help in the lab. Because virtual education is an independent self-paced course, successful students will possess the ability to effectively organize and manage time.

**11650 WORLD MYTHOLOGY** **One Local Elective Credit**

World Mythology introduces students to major themes, stories, and characters in the mythologies of several different cultures. The course will concentrate on Greek and Roman mythology, but will also include material from Norse, Celtic, Native American, African and Egyptian mythology. The course will be taught using

an interdisciplinary approach that considers literary and artistic themes from diverse perspectives including theology, sociology, anthropology and history.

#### **1165V VIRTUAL WORLD MYTHOLOGY VVA**

##### **One Elective Credit**

Same as 11650 except this course is delivered virtually through Virtual Virginia. Student work will be required outside of class time.

#### **11710 CREATIVE WRITING/LITERARY MAGAZINE I**

##### **One Elective Credit**

The creative writing course has a dual objective: to develop student poetry and prose fiction and to publish a professional quality literary magazine during the spring semester. Students will receive feedback on their own writing and will learn the fundamentals of editing. Students will serve as the staff in all aspects of magazine publication: desktop publishing technology, promotion, and advertising.

#### **11711 CREATIVE WRITING/LITERARY MAGAZINE II**

##### **One Elective Credit**

This course is a writing intensive class designed for students who have completed the introductory course, Creative Writing/Literary Magazine I. The course builds upon and refines the skills and concepts developed in the introductory course and will feature self-directed projects and student-led discussions with a strong emphasis on the professional writer's craft. Journals, short stories, and poetry will be gathered and developed into lengthier pieces such as a novella, memoir, and chapbook by the end of the semester. Students are required to submit work for publications both within and outside the school. Creative Writing/Literary Magazine II students will assume the staff leadership roles for the school's online literary magazine, Impressions.

#### **1171V VIRTUAL CREATIVE WRITING VVA**

##### **One Elective Credit**

Offered through Virtual Virginia, this course is an introduction to the major genres of creative (imaginative) writing, including fiction, poetry, drama, and personal essay (creative nonfiction). The class will examine the creative process through experimentation with a variety of creative exercises. The types of experimental writing will examine the formal, technical elements of fiction, poetry, and drama. In addition, the course will feature reading, analyzing, and critiquing a variety of literary examples, including the student's writing. The course members will compose stories, poems, and dramatic scenes. Finally, this course will prepare the student for more advanced work in creative writing, including fiction and poetry writing. Student work will be required outside of class time.

#### **11810 READ 180 I - Grade Level 9**

##### **One Elective Credit**

This course follows the Scholastic READ 180® and System 44® reading curriculums designed to accelerate students' reading skills, foster independent thinkers, and prepare them for college and careers. Instruction combines direct, teacher-led whole-group instruction, small-group differentiated skill instruction, and independent reading and computer-based rotations. High-interest non-fiction and literary content allows students to practice foundational literacy skills while gaining content-area knowledge. Students progress through increasingly complex readings, critical thinking, discussions, and writing activities that help to make reading relevant to their lives. **NOTE:** Students are nominated for this course based on the Scholastic Reading Inventory.

#### **11811 READ 180 II – Grade Level 10**

##### **One Elective Credit**

This is the second year of the Read 180 course. This course follows the Scholastic READ 180® and System 44® reading curriculums designed to accelerate students' reading skills, foster

independent thinkers, and prepare them for college and careers. Instruction combines direct, teacher-led whole-group instruction, small-group differentiated skill instruction, and independent reading and computer-based rotations. High-interest non-fiction and literary content allows students to practice foundational literacy skills while gaining content-area knowledge. Students progress through increasingly complex readings, critical thinking, discussions, and writing activities that help to make reading relevant to their lives. **NOTE:** Students are nominated for this course based on the Scholastic Reading Inventory.

#### **11812 READ 180 III – Grade Level 11**

##### **One Elective Credit**

This is the third year of the Read 180 course. This course follows the Scholastic READ 180® and System 44® reading curriculums designed to accelerate students' reading skills, foster independent thinkers, and prepare them for college and careers. Instruction combines direct, teacher-led whole-group instruction, small-group differentiated skill instruction, and independent reading and computer-based rotations. High-interest non-fiction and literary content allows students to practice foundational literacy skills while gaining content-area knowledge. Students progress through increasingly complex readings, critical thinking, discussions, and writing activities that help to make reading relevant to their lives. **NOTE:** Students are nominated for this course based on the Scholastic Reading Inventory.

#### **11813 READ 180 IV – Grade Level 12**

##### **One Elective Credit**

This is the fourth year of the Read 180 course. This course follows the Scholastic READ 180® and System 44® reading curriculums designed to accelerate students' reading skills, foster independent thinkers, and prepare them for college and careers. Instruction combines direct, teacher-led whole-group instruction, small-group differentiated skill instruction, and independent reading and computer-based rotations. High-interest non-fiction and literary content allows students to practice foundational literacy skills while gaining content-area knowledge. Students progress through increasingly complex readings, critical thinking, discussions, and writing activities that help to make reading relevant to their lives. **NOTE:** Students are nominated for this course based on the Scholastic Reading Inventory.

#### **1195A AP ENGLISH LITERATURE AND COMPOSITION**

##### **Grade Level 12**

##### **One English Credit W**

This course prepares students for the Advanced Placement English Literature and Composition exam, which concentrates on the genres of poetry, novels, and drama. The course will emphasize British literature. Students will be expected to think critically, to synthesize literature, and to write effectively. Students are expected to do many timed-writing experiences and to develop extended persuasive as well as analytical essays and documented papers.

#### **1195V VIRTUAL AP ENGLISH LITERATURE AND COMPOSITION VVA**

##### **One English Credit W**

Same as 1195A but the course is offered through Virtual Virginia.

#### **1196A AP ENGLISH LANGUAGE AND COMPOSITION**

##### **Grade Level 11**

##### **One English Credit W**

This course prepares students for the Advanced Placement English Language and Composition exam which focuses on rhetorical analysis and argumentative writing. This intensive writing course explores the themes of American literature and literary techniques of persuasive speeches and essays. One of the benchmarks of the course is the researched argumentative paper. **NOTE:** Students will be required to take the Reading and Writing SOL tests related to this course. Both reading and writing must be passed prior to graduation.

**DE1196A AP ENGLISH LANGUAGE AND COMPOSITION DE  
Grade Level 11 One English Credit W  
Need a description for this new class at EMHS**

**1196V VIRTUAL AP ENGLISH LANGUAGE AND  
COMPOSITION VVA One English Credit W**  
Same as 1196A but the course is offered through Virtual Virginia.

**1200 JOURNALISM I One Elective Credit**  
**Prerequisites: English grade of "B" or higher is strongly recommended and teacher recommendation is required.** This class requires an application which is available in the guidance office. In Journalism I, students will learn the basics of journalism, with a focus on print media. Students will write newspaper articles, take photographs, sell advertisements, and create page layouts. Members of the class will use available technology for page design and digital photography. This is a publications course. It does not satisfy the required English course for each grade.

**12100 JOURNALISM II One Elective Credit**  
**Prerequisites: Journalism I with teacher recommendation is required.** This class requires an application which is available in the guidance office. In Journalism II, students will continue the requirements of Journalism I and also fulfill leadership roles and responsibilities. Second-year staff members will be responsible for the overall production of the newspaper and important decision making. This is a publications course. It does not satisfy the required English course for each grade.

**12110 JOURNALISM III One Elective Credit**  
**Prerequisites: Journalism II with teacher recommendation is required.** This class requires an application which is available in the guidance office. In Journalism III, students will continue the requirements of Journalism II and also fulfill leadership roles and responsibilities. Third-year staff members will be responsible for the overall production of the newspaper and important decision making. This is a publications course. It does not satisfy the required English course for each grade.

**DE1211 DUAL ENROLLED JOURNALISM  
Grade Level 11 One Elective Credit W**  
**Prerequisites: Placement Test and English grade of "B" or higher is strongly recommended; teacher recommendation is required.** This dual enrollment journalism course meets the NRCC syllabus for Introduction to Journalism. To meet NRCC requirements, the course introduces students to all news media, especially news gathering and preparation for print. **NOTE: This course satisfies NRCC's ENG 121 and ENG 122 for 6 college credits. This course may carry with it a fee to NRCC.**

**12120 JOURNALISM IV One Elective Credit**  
**Prerequisites: Journalism III with teacher recommendation is required.** This class requires an application available in the guidance office. In Journalism IV, students will continue the requirements of Journalism III and also fulfill leadership roles and responsibilities. Fourth-year staff members are responsible for assisting Journalism I-III students with the layout and production of the newspaper. Students in Journalism IV are also expected to be team leaders for their specific team. This is a publications course. It does not satisfy the required English course for each grade.

**DE1212 DUAL ENROLLED JOURNALISM  
Grade Level 12 One Elective Credit W**  
**Prerequisites: DE1211 with teacher recommendation is required.** This dual enrollment journalism course meets the NRCC syllabus for Advanced Journalism. To meet NRCC requirements, the course introduces students to all news media,

especially news gathering and preparation for print. **NOTE: This course satisfies NRCC's ENG 221 and 222 for 6 college credits. This course may carry with it a fee to NRCC.**

**12200 JOURNALISM V One Local Elective Credit**  
**Prerequisites: Journalism IV with teacher recommendation is required.** This class requires an application available in the guidance office. Journalism V is available to students in grades 11 and 12. It is a repetition of Journalism I-IV. If students are interested in a career in journalism, it is strongly advised that students continue taking journalism. This is a publications course. It does not satisfy the required English course for each grade.

**12150 MEDIA ARTS I One Local Elective Credit**  
**Prerequisites: Membership in grades 10-12 and teacher recommendation.** Media Arts I covers basic principles of media ethics, graphic design, page design and layout, photo cropping, reporting, copyrighting, copy-editing, and advertising. It provides students with hands-on experience in planning and preparation of the school yearbook. Students are required to sell ads and/or contact businesses for the purpose of fund raising. This is a publications course. It does not satisfy the required English course for each grade.

**12160 MEDIA ARTS II One Local Elective Credit**  
**Prerequisites: Membership in grades 10-12 and Media Arts I with recommendation by course teacher.** Media Arts II continues the study of journalistic principles and practices and adds a "hands-on" approach to photography. Students will take part in the concept development, headline writing, picture taking, article writing and editing of the school yearbook. This is a publications course. It does not satisfy the required English course for each grade.

**12170 MEDIA ARTS III One Local Elective Credit**  
**Prerequisites: Membership in grades 10-12 and Media Arts II with recommendation by course teacher.** Media Arts III continues the application of photojournalism principles and practices with the use of desktop publishing. Media Arts III students will take on added responsibilities and assist in each phase of the production of the school yearbook. Editing pages and teaching fundamentals of yearbook design to new staff members will also be required. This is a publications course. It does not satisfy the required English course for each grade.

**12171 MEDIA ARTS IV One Local Elective Credit**  
**Prerequisites: Membership in grades 10-12 and Media Arts III with recommendation by course teacher.** In Media Arts IV, students will be editors-in-chief of the school yearbook and will be responsible for the writing, rewriting, editing, and proofreading of the articles, picture taking, picture cropping, layout design, headlines, and captions. Legal and financial aspects will be taught as well as the responsibilities of the yearbook advisors. This is a publications course. It does not satisfy the required English course for each grade.

**13000 SPEECH FUNDAMENTALS (FORENSICS/DEBATE)  
One Elective Credit**  
This course is a 9<sup>th</sup> period or a 5<sup>th</sup> block offering that meets after regular school hours. Upon enrolling in the course students will be introduced to the rules and events for competitive public speaking. They will be assisted in choosing which aspects of these activities they wish to pursue. The majority of class time will be devoted to preparation of, and participation in, competitive activities. Students will be required to participate in out of town competitions at their own expense as a part of the course requirements. Labs will be directed by the teachers responsible for forensic and debate activities. The lab sessions will be divided between debate and speech. It is possible for a student to

participate in both labs or only one. The credit for the course is limited to one credit per year, regardless of whether the student participates in both labs or only one. The course may be repeated for credit.

#### **14100 THEATRE I INTRODUCTION TO THEATRE**

##### **One Elective Credit**

**Prerequisite:** An enthusiasm for performance. This course is designed for students who wish to learn the basics of acting and performance. Topics include improvisation, the history of theatre and the modern musical, oral interpretation of literature, fundamentals of puppetry and pantomime, and techniques of play production.

#### **14200 THEATRE II ADVANCED THEATRE**

##### **One Elective Credit**

**Prerequisite:** Theatre I. Advanced Theatre is for students who wish to refine their speech and drama skills and learn about the history of theatre. Topics include the analysis of the creative process and oral interpretation, with emphasis on analysis. Performance skills and play production are emphasized, including performance of literature, directing, dramatic techniques, acting methods, monologue and scene performance, and make-up application.

#### **14300 ADVANCED ACTING**

##### **One Elective Credit**

**Prerequisite:** Teacher Recommendation and Theatre I and II. Advanced Acting is designed for the serious drama student and builds on the background established in Theatre I & II, continuing the development of acting skills. Acting and directing principles are applied through exercises and performances. Emphasis will be on public and competitive performances, independent research, and rehearsal of individual material.

#### **14350 TECHNICAL THEATRE**

##### **One Elective Credit**

Technical theatre is a 9<sup>th</sup> period offering for students interested in stage crew, arts management or set design. Responsibilities include general auditorium upkeep, setting up and breaking down equipment and running all events requiring technical assistance. Instruction will also be given in arts administration, set design, set construction, lighting, sound, and other topics based on student interest. This class does not meet on a daily basis, but on a contractual arrangement. This course may be repeated for credit.

#### **14460 FILM STUDY**

##### **One Elective Credit**

**Prerequisite:** Teacher Approval. This course explores the history of movies from the silents to the present through viewing selected material representing different periods of history, styles, and genres; through reading about the medium; and through evaluating material presented to the public of today by studying reviews and seeing current releases. This course fulfills the fine arts requirement.

#### **15150 FRESHMAN ENGLISH PROGRESSIVE**

##### **One Local Elective Credit**

This class is for entering ninth-grade students who need to strengthen their reading and writing skills as they study the ninth-grade curriculum. The class will emphasize reading and study strategies, allowing time for sustained silent in-class reading as well as hands-on lessons that appeal to a number of different learning styles. This course is paired with English 9. **NOTE:** This blocked course is paired with English 9 second semester.

#### **15151 LITERACY AND LANGUAGE**

##### **One Elective Credit**

Literacy and Language is designed to help students develop reading and writing strategies so that they can be successful in all high school classes. Students will study both fiction and nonfiction texts, including graphics (maps, charts, tables) and the Internet. Instruction will focus on developing reading fluency, vocabulary, and reading strategies, including questioning,

visualizing, connecting, predicting, summarizing and monitoring understanding. Students will write in response to fiction and nonfiction and learn to apply the writing process to develop persuasive texts. At EMHS this course is paired with English 9 and is required for ninth grade students who failed the reading portion of the eighth grade SOL test.

#### **15157 EXTENDED ENGLISH 11**

##### **One Local Elective Credit**

Extended English 11 is a first semester 90 minute class that provides students additional time and intervention strategies to develop the reading and writing skills necessary to be successful on the Grade 11 EOC Reading and Writing SOL tests. The course is paired with English 11 second semester. Grammar, reading comprehension, vocabulary, spelling, and composition are the core components of the course. Students will read fiction, nonfiction, functional and graphic (e.g., maps, charts, tables) texts both in print and online and will develop their skills to compose a persuasive text online. The course is recommended for students at risk of not passing one or both EOC English SOL tests.

#### **15158 EXTENDED ENGLISH 12**

##### **One Local Elective Credit**

Extended English 12 is first semester 90 minute class that provides students focused time and strategies to develop the reading and writing skills necessary to be successful on the Grade 11 EOC Reading and Writing SOL tests. The course is paired with English 12 second semester. Grammar, reading comprehension, vocabulary, spelling, and composition are the core components of the course. Students will read fiction, nonfiction, functional and graphic (e.g., maps, charts, tables) texts both in print and online and will develop their skills to compose a persuasive text online. The course is recommended for students who did not pass one or both Grade 11 EOC English SOL tests.

#### **15160 PRE-ENGLISH 10**

##### **One Local Elective Credit**

This is a block or double-period course that emphasizes basic reading and writing skills designed to increase student ability and ready them for English 10. The course is paired with English 9 second semester. Grammar, reading comprehension, vocabulary, and spelling are major class components. The writing process will be emphasized to prepare students for English 10 and the English 11 writing SOL test. Students will study a variety of literary works. **NOTE:** This blocked course is paired with English 10 second semester.

#### **DE1600A ENGLISH 11 DE DUAL ENROLLMENT COLLEGE**

##### **COMPOSITION**

##### **One English Credit W**

##### **Grade Level 11**

##### **Prerequisites: English 10 and Placement Test**

English 11 DE addresses Grade 11 Virginia Standards of Learning. It is an EOC course and students are required to take two SOL tests: one reading and one writing. Both SOL tests must be passed prior to graduation. English 11 DE is based on NRCC syllabi for College Composition I and II. To meet NRCC requirements, the course develops writing ability for study, work, and other areas of writing based on experience, observation, research and reading of selected literature. Students will be guided in learning writing as a process and the following concepts: understanding audience and purpose, exploring ideas and information, composing, revising, and editing. Students will learn to support their writing by integrating, composing, revising, and editing skills and by integrating experiences in thinking, reading, listening, and speaking. **NOTE: This course satisfies English 11 as well as NRCC's English 111 & 112, for 6 college credits. This course may carry with it a fee to NRCC.**

**DE1600B ENGLISH 12 DUAL ENROLLMENT COLLEGE  
COMPOSITION One English Credit W  
Grade Level 12**

**Prerequisites: English 11 and Placement Test**

English 12 DE is based on NRCC syllabi for College Composition I and II. To meet NRCC requirements, the course develops writing ability for study, work and other areas of writing based on experience, observation, research and reading of selected literature. Students will be guided in learning writing as a process and the following concepts: understanding audience and purpose, exploring ideas and information, composing, revising, and editing. Students will learn to support their writing skills by integrating, composing, revising, and editing as well as by integrating experiences in thinking, reading, listening and speaking. **NOTE: This course satisfies English 12 as well as NRCC's ENG 111 & 112, for 6 college credits. This course may carry with it a fee to NRCC.**

**DE1601 ENGLISH 12 DUAL ENROLLMENT SURVEY OF  
ENGLISH LITERATURE One English Credit W  
Grade Level 12**

**Prerequisites: English 11 Dual Enrollment or English 11 AP with a score of 3 or higher on the AP Exam and NRCC Placement Test. English 12 DE is based on NRCC syllabi for the survey of English Literature I and II.** The course focuses on major English works from the Anglo-Saxon period to the present, emphasizing ideas and characteristics of British literary tradition. Course work involves critical reading and writing. **NOTE: This course satisfies English 12 as well as NRCC's ENG 243 & 244, for 6 college credits. This course may carry with it a fee to NRCC.**

**DE1602 SPEECH FUNDAMENTALS(FORENSICS/DEBATE)  
Grade Levels 11-12 One Speech Credit W  
Prerequisites: NRCC Placement Exam**

DE 1602 meets NRCC syllabus requirements for Principles of Public Speaking (CST 100) and Speech Workshop (CST 116). CST 100 applies theory and principles of public address with emphasis on composition and delivery, and CST 116 enables work in competitive speech activities such as debate, oratory, impromptu speaking, prose and poetry reading, and rhetorical criticism. Students will be introduced to the rules and events for competitive public speaking. They will be assisted in choosing which aspects of these activities they wish to pursue. The class time will be devoted to preparation of and participation in competitive activities. Students will be required to participate in out of town competitions at their own expense as a part of the course requirements. Labs will be directed by the teachers responsible for forensic and debate activities. The lab sessions will be divided between debate and speech. It is possible for a student to participate in one or both labs. **Note 1: This course is for students in forensics and debate. It is not the second year of DE English. Note 2: This course earns one speech credit as well as NRCC's CST 100 and CST 116 for 6 college credits. This course may carry with it a fee to NRCC.**

<b>SOCIAL STUDIES</b>
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**2212V ADVANCED PLACEMENT HUMAN GEOGRAPHY  
VIRTUAL VVA**
**One Credit W**
**This course is delivered virtually through Virtual Virginia.**

Students are introduced to fundamental concepts used by political scientists to study the processes and outcomes of politics in a variety of settings. The course aims to illustrate the rich diversity of political life, to show available institutional alternatives, to explain differences in processes and policy outcomes, and to communicate the importance of global political and economic changes. This course does NOT substitute for U.S. Government under the Virginia Standards of Learning. Student work will be required outside of class time.

**22150 WORLD HISTORY AND GEOGRAPHY TO 1500 AD**
**One Credit**

Ninth grade students will study world geography and world history from the earliest civilization to the end of the 15<sup>th</sup> Century. Emphasis will be placed on physical geography, geography skills, and the influences of geography on the development, continuity, and change of civilizations and cultures. Physical geography will include the study of the five themes of geography as well as developing analytical skills in interpreting maps, photographs, graphs, charts. The origin of Western Civilization and the impact of early non-western civilizations from ancient times through the Renaissance are central themes of the course. **NOTE:** Students will be required to take the SOL test related to this course.

**PA2215 WORLD HISTORY/GEOGRAPHY I PROJECT AIM**
**One Credit**

Same as 22150 except the course is taught through Project AIM.

**2215H WORLD HISTORY AND GEOGRAPHY TO 1500 AD  
HONORS**
**One Credit**

Ninth grade students will study world geography and world history from the earliest civilization to the end of the 15<sup>th</sup> Century. Emphasis will be placed on physical geography, geography skills, and the influences of geography on the development, continuity, and change of civilizations and cultures. Physical geography will include the study of the five themes of geography as well as developing analytical skills in interpreting maps, photographs, graphs, charts. The origin of Western Civilization and the impact of early non-western civilizations from ancient times through the Renaissance are central themes of the course. Emphasis will be placed on comparative political, economic, and social systems. Concepts and techniques employed by historians, archaeologists and other social scientists are explored. **This course will be taught at an advanced level. NOTE:** Students will be required to take the SOL test related to this course.

**22160 WORLD HISTORY & GEOGRAPHY 1500 TO PRESENT**
**Prerequisite: World History and Geography**
**One Credit**

World History and Geography 1500 to Present will provide students with an examination of the historical themes which led to the establishment of vast empires by various European powers since the period of the Renaissance. The impact of European expansion into the Americas, Africa, and Asia during the 15<sup>th</sup> through the 19<sup>th</sup> centuries will be analyzed. Students will describe the political, economic, and social changes that developed in Europe during this same period. Students will gain an understanding of the impact of technology, especially analyzing the effects of the Industrial Revolution. This will lead to students explaining the development of twentieth century imperialism and nationalism, the rise of totalitarianism and the impact of World War I and II. The course concludes by focusing upon themes that

have emerged during the post-world war era. Students will describe political developments in Europe and the United States in the second half of the 20<sup>th</sup> century. Political, economic, social, and physical geography will be incorporated throughout the course, allowing student to demonstrate skills in geographical analysis. **NOTE:** Students will be required to take the SOL test related to this course.

**2216H WORLD HISTORY AND GEOGRAPHY 1500 TO**
**PRESENT - HONORS**
**One Credit**
**Prerequisite: World History and Geography I**

World History and Geography 1500 to Present Honors will provide students with an examination of the historical themes which led to the establishment of vast empires by various European powers since the period of the Renaissance. The impact of European expansion into the Americas, Africa, and Asia during the 15<sup>th</sup> through the 19<sup>th</sup> centuries will be analyzed. Students will describe the political, economic, and social changes that developed in Europe during this same period. Students will gain an understanding of the impact of technology, especially analyzing the effects of the Industrial Revolution. This will lead to students explaining the development of twentieth century imperialism and nationalism, the rise of totalitarianism and the impact of World War I and II. The course concludes by focusing upon themes that have emerged during the post-world war era. Students will describe political developments in Europe and the United States in the second half of the 20<sup>th</sup> century. Political, economic, social, and physical geography will be incorporated throughout the course, allowing student to demonstrate skills in geographical analysis. **This course will be taught at an advanced level. NOTE:** Students will be required to take the SOL test related to this course.

**2319A AP U.S. HISTORY**
**One Credit W**

This course presents an in depth study of United States history from the colonial era to the present. It covers the various themes of American history, such as political, economic, social, military, international, and religious factors. Texts, assignments, readings, and tests are on the university level. Students at the end of the year may opt to take a national comprehensive examination which will be used by colleges for credits, admissions, and entrance into honors programs. Students should meet the demanding requirements of regular and lengthy assignments, individual discipline, library and writing skills, as well as having the ability to analyze and interpret primary and secondary sources. Financial assistance is available to low-income students who wish to take this AP examination. **NOTE:** Students are encouraged to either take the SOL test related to this course or substitute an Advanced Placement score of 2 or better.

**DE2319A AP U.S. HISTORY DUAL ENROLL**
**One Credit W**
**Need a description for this new class at EMHS**
**2319V AP U.S. HISTORY-VIRTUAL VVA**
**One Credit W**

Same as 2319A **except this course is delivered virtually through Virtual Virginia.**

**23600 VIRGINIA AND U.S. HISTORY**
**One Credit**

This is a survey course, which includes a study of the development of American ideals and institutions through the major events, eras, and personalities of US history from the age of discovery through the modern era. The course provides a perspective on the relationship between the past and contemporary issues. Virginia's history is emphasized from the colonial period through the Civil War period. This course further develops and refines the previously learned writing and thinking skills in interpreting charts, graphs, and maps. Other skills emphasized are developing and understanding of events as a

part of a chronological sequence; developing problem-solving and critical thinking skills; organizing, analyzing, interpreting, and synthesizing information. **NOTE:** Students will be required to take the SOL test related to this course.

**PA2360 VIRGINIA & U.S.HISTORY PROJECT AIM One Credit**  
Same as 23600 except the course is taught through Project AIM.

**23610 VIRGINIA AND U.S. HISTORY PART I One Credit**  
VA/US History, Part 1 is the first of a two-course sequence designed to help students understand and apply the content and concepts of US and VA history. This is a survey course, which includes a study of the development of American ideals and institutions through the major events, eras, and personalities of US history from the age of discovery through the modern era. Virginia's history is emphasized from the colonial period through the Civil War period. This course further develops and refines the previously learned writing and thinking skills in interpreting charts, graphs, and maps. Other skills emphasized are developing and understanding of events as a part of a chronological sequence; developing problem-solving and critical thinking skills; organizing, analyzing, interpreting, and synthesizing information. **NOTE:** To earn credit toward meeting graduation requirements using this course, students must also complete Part II of the two-course sequence. One Elective Credit before completion of Part II.

**23620 VA. AND U.S. HISTORY PART II One Credit**  
VA/US History, Part 2 follows VA/US History, Part 1, and is designed to help students understand and apply the content and concepts of US and VA history. This is a survey course, which includes a study of the development of American ideals and institutions through the major events, eras, and personalities of US history from the age of discovery through the modern era. Virginia's history is emphasized from the colonial period through the Civil War period. This course further develops and refines the previously learned writing and thinking skills in interpreting charts, graphs, and maps. Other skills emphasized are developing and understanding of events as a part of a chronological sequence; developing problem-solving and critical thinking skills; organizing, analyzing, interpreting, and synthesizing information. The complete curriculum is covered over the span of the two courses. **NOTE:** Students will be required to take the SOL test related to this course. Students will receive one social studies credit after completing VA/US History, Part II towards meeting graduation requirements.

**2380A AP WORLD HISTORY One Credit W**  
The purpose of the AP World History course is to develop greater understanding of the evolution of global processes and contacts, in interaction with different types of human societies. This understanding is advanced through a combination of selective factual knowledge and appropriate analytical skills. The course highlights the nature of changes in international frameworks and their causes and consequences, as well as comparisons among major societies.

**23870 TWENTIETH CENTURY HISTORY/MODERN AND CONTEMPORARY One Elective Credit**  
This class will explore major events of the Twentieth Century. Critical times such as World War I, the Great Depression and New Deal, World War II, the Cold War, Civil Rights, and the 1980s and 1990s will be covered. The course will also include current events that will allow students to gain perspective on the events that directly shape their lives. The historical context of the Twentieth Century as well as an emphasis on current events will provide an opportunity for deeper understandings of the world we live in by seeing the Twentieth century roots to many of the issues

that face the world today. **NOTE:** This course is an elective course and does not substitute for required social studies courses, such as World History, US/VA History and US/VA Government.

**2399A AP EUROPEAN HISTORY One Credit W**  
**Prerequisite: World History and Geography**

This course covers the history of Europe from 1450 to the present. The political, military, economic, geographic, cultural, and social factors that underpin the modern political order are examined in depth. Students will develop critical thinking skills through analysis and interpretation of primary and secondary sources. Research and writing skills will be emphasized, as will technique for mastery of document-based questions. This course is designed to prepare the student for a comprehensive year-end Advanced Placement examination. Financial Assistance is available to low-income students who wish to take this Advanced Placement examination. **NOTE:** Students will be encouraged to either take the SOL test related to this course or substitute an Advanced Placement score of 2 or better.

**2399V AP EUROPEAN HISTORY VVA One Credit W**  
Same as 2399A **except this course is delivered virtually through Virtual Virginia.**

**24200 LAW RELATED EDUCATION One Elective Credit**  
This course will investigate the most up-to-date procedures and changes in criminal and civil law in the United States and Virginia. It will address the specific concerns and interests of secondary school students, carefully explaining both practical and theoretical concerns of the law. Emphasis will be on both the Constitutional aspects of law and the practical problems facing students in the real world such as their rights as citizens, consumers, workers, witnesses and victims of the legal system.

**24400 VIRGINIA AND U.S. GOVERNMENT One Credit**  
Virginia and United States Government is a course that examines the basic structure of the different levels of government, national, state and local. It provides an in-depth study of the US Constitution and its amendments, as well as a thorough study of the foundations and principles upon which democratic government rests. The branches of government and the powers inherent to each are thoroughly examined, as well as current events and their worldwide effects. Included is a study of the Virginia Constitution and local governing bodies. Characteristics of the US economic system are explored. Importance is placed on the practical application of political theory and special emphasis is given to basic democratic values, the importance of citizen participation in the democratic process, and the understanding of social, political, economic issues and current events. Students are encouraged to participate in the political life of their community, by registering to vote and voting, by attending political and/or public meetings and by writing letters or speaking in public forums. Community service will also be strongly encouraged.

**PA2440 VIRGINIA & U.S. GOVERNMENT PROJECT AIM One Credit**  
Same as 24400 except the course is taught through Project AIM.

**DE 2440V Virginia and U.S. Government One Credit W**  
Same as 24400 but the course is delivered virtually and is Dual Enrolled.

**2445A AP GOVERNMENT AND POLITICS: UNITED STATES One Credit W**  
The Advanced Placement program in government and politics is designed for academically talented students who are not only college bound, but are also motivated and capable of handling a college course in high school. The course is a critical study, in

survey fashion, of government and politics in the United States. The use of primary sources is integrally incorporated in the course of study. Students should expect a rigorous and fast-paced program of reading, writing, and in-depth analysis of the American political system. Upon completion of the course students may elect to take the AP examination that presumes at least one (1) semester's college level preparation. Enrollment in the course does not mandate taking the tests; however, students should realize that the instruction is designed with AP tests in mind.

**2445V AP GOVERNMENT AND POLITICS: UNITED STATES  
VVA One Credit W**  
Same as 2445A but **this course is delivered virtually through Virtual Virginia.**

**2450A AP GOVERNMENT AND POLITICS: COMPARATIVE  
One Credit W**

The AP course in government and politics is designed for academically talented students who are not only college-bound, but who are motivated and capable of handling a college course in high school. Comparative Government focuses on specific representative countries (comparative systems) so that the student obtains an understanding of the diversity of world political structures and politics. Upon completion of the course(s), students may elect to take one or both AP examinations, which presume at least one term's college level preparation. Enrollment in the course does not mandate taking the AP examination; however, students should realize that the instruction is designed with the AP examination in mind.

**2450V AP GOVERNMENT AND POLITICS: COMPARATIVE  
VVA One Credit W**  
Same as 2450A but **this course is delivered virtually through Virtual Virginia.**

**25000 SOCIOLOGY One Elective Credit**

This course deals with the concepts and principles necessary for the study of human relationships from the level of small group to mass behavior. In addition, students learn the terminology and scientific methodology of the discipline. Some special topics emphasized include the components and variations of culture and the ways individuals are socialized into their culture. A major unit on social institutions presents the institutions by which society functions: the family, education, religion, economy, and government. Causes and consequences of social problems in our society are considered along with causes of unplanned social change and strategies for implementing intentional change.

**29000 PSYCHOLOGY One Elective Credit**

Psychology is a course that provides a study of the thought processes and behavior of humans. The class examines the history of psychology including modern methods of behavioral analysis. Various topics of interest are covered, including the brain and learning styles, biological behavior, human development stages from infancy to elderly, personality types, the effects of sleep and sleep disorders, dream stages, intelligence, and psychological disorders. Through examination of these topics, students gain an in-depth understanding of their behavior, as well as the behavior of others.

**2902A AP PSYCHOLOGY One Elective Credit W**

This survey course is an opportunity to investigate the field of psychology in greater depth than the psychology/sociology course offers. Students will concentrate on recent studies across many topics/subfields of psychology. Critical thinking skills and analysis will also be developed throughout work in the course. At the end of the year, students may opt to take a national comprehensive

examination, which can be used by colleges for credits, admissions and entrance into honor programs. Enrollment in the course does not mandate taking the test; however, students should realize that the instruction is designed with the test in mind. Therefore, students need to be able to meet the demanding requirements in and out of class.

**DE2950 UNITED STATES GOVERNMENT DUAL  
ENROLLMENT One Credit W**

Dual Enrollment Government focuses on political institutions and processes of the national government of the United States, specifically on the Congress, presidency, the courts and on their interrelationships. Attention is also given to public opinion, suffrage, political parties, interest groups, civil rights, domestic policy, and foreign relations. In addition, this course teaches structure, powers and functions of state and local government in the United States. **NOTE:** This course satisfies the US/VA Government requirement for graduation as well as NRCC's Political Science PLS135 & PLS136, for 6 college credits.

**DE2950V VIRTUAL UNITED STATES GOVERNMENT DUAL  
ENROLLMENT One Credit W**

Same as DE2950 except delivered virtually,

**DE2951 UNITED STATES HISTORY I & II DUAL ENROLLMENT  
One Credit W**

Dual Enrollment US History I/ II is designed to help students learn United States history so that their greater knowledge of past events, people, trends, and outlooks allow them to be better equipped to understand and interpret present developments. This is a survey course, which includes a study of the development of American ideals and institutions through the major events, eras, and personalities of US history from the age of discovery through the modern era. The course provides a perspective on the relationship between the past and contemporary issues. **NOTE:** This course satisfies the US/VA History requirement for graduation as well as NRCC's HIS 121/122 for 6 college credits. Students will be required to pass the SOL test related to this course to receive credits toward graduation.

**DE2951V VIRTUAL UNITED STATES HISTORY I & II DUAL  
ENROLLMENT One Credit W**

Same as DE2951 except delivered virtually.

**29950 WORLD MYTHOLOGY One Local Elective Credit**

World Mythology introduces students to major themes, stories, and characters in the mythologies of several different cultures. The course will concentrate on Greek and Roman mythology, but will also include material from Norse, Celtic, Native American, African and Egyptian mythology. The course will be taught using an interdisciplinary approach that considers literary and artistic themes from diverse perspectives including theology, sociology, anthropology and history.

**29960 PSYCHOLOGY/SOCIOLOGY One Elective Credit  
Psychology - Taught for one semester.**

Psychology is defined as the science of behavior and thinking of organisms. In general, the class deals with topics like human development, personality, learning theory, motivation, mental illness and group behavior. Areas of current interest such as drug abuse and stress are explored. In specific, the student is able to apply many learning situations to his/her everyday life.

**Sociology - Taught for one semester.**

This semester course deals with the concepts and principles necessary for the study of human relationships from the level of

small group to mass behavior. In addition, students learn the terminology and scientific methodology of the discipline. Some special topics emphasized include the components and variations of culture and the ways individuals are socialized into their culture. A major unit on social institutions presents the institutions by which society functions: the family, education, religion, economy, and government. Causes and consequences of social problems in our society are considered along with causes of unplanned social change and strategies for implementing intentional change.

#### **DE2996 PSYCHOLOGY/SOCIOLOGY DUAL ENROLLMENT**

##### **One Elective Credit W**

Students will engage in the study of both Psychology and Sociology in this Dual Enrollment course. Psychology is defined as the science of behavior and thinking of organisms. In general, the class deals with topics like human development, personality, learning theory, motivation, mental illness and group behavior. Areas of current interest such as drug abuse and stress are explored. In specific, the student is able to apply many learning situations to his/her everyday life. Sociology deals with the concepts and principles necessary for the study of human relationships from the level of small group to mass behavior. In addition, students learn the terminology and scientific methodology of the discipline. **NOTE:** This course satisfies NRCC's Principles of Psychology (PSY 200) and Principles of Sociology (SOC 200) for 6 college credits.

#### **DE2996V VIRTUAL PSYCHOLOGY/SOCIOLOGY DUAL ENROLLMENT**

##### **One Elective Credit W**

Same as DE2996 except the course is offered virtually.

#### **29970 APPALACHIAN HISTORY**

##### **One Credit**

This course introduces the Appalachian Mountain region through a survey of its geography, history, cultures, lifestyles, and the arts. A focus will be on local/regional history to provide an awareness and appreciation for the Appalachian region. Basic to the course are focused readings and discussions on Appalachia, including multiple perspectives on a variety of topics that may encompass among them geography, history, culture, folklore, literature, music, the arts, economics, politics, religion, and education.

#### **29980 WOMEN'S STUDIES**

##### **One Credit**

This course is an introduction to the interdisciplinary field of Women's Studies through global and multicultural perspectives. It provides an overview of women's experiences and their activism to achieve equality over time and across the world, with attention to differences of gender, race, ethnicity, class, sexuality, and nation. Topics include women's rights movements, gender as a social and historical context, pop culture messages, as well as women in religion and politics and an exploration of ecofeminism.

<b>MATHEMATICS</b>
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**31300 ALGEBRA I****One Credit**

This course extends students' knowledge and understanding of the real number system and its properties through the study of variables, expressions, equations, inequalities, and analysis of data derived from real-world phenomena. Use of a graphing calculator is considered essential to provide a graphical and numerical approach to topics in addition to a symbolic approach. Topics include linear equations and inequalities, systems of linear equations, relations, functions, polynomials, and statistics. **Students are required to take the Standards of Learning End of Course Test.**

**31310 ALGEBRA I – PART 1****One Elective Credit**

Algebra I Part 1 is the first of a two-course sequence designed to provide additional instructional time for students to develop, understand, and apply the concepts and skills of Algebra I. The complete Algebra I curriculum is taught over the span of the two-course sequence. **To earn a math credit meeting graduation requirements, students must successfully complete Part 2 of the two-course sequence.**

**31320 ALGEBRA I – PART 2****One Credit**

Algebra I Part 2 is the second of a two-course sequence designed to provide additional instructional time for students to develop, understand, and apply the concepts and skills of Algebra I. The complete Algebra I curriculum is taught over the span of the two-course sequence. Algebra I Part 2 includes a review of the Algebra I Part 1 content. **Students are required to take the Standards of Learning End of Course Test.**

**PA3130 ALGEBRA I PROJECT AIM****One Credit**

Same as 31300 except the course is taught through Project AIM.

**31340 ALGEBRA, FUNCTIONS, AND DATA ANALYSIS (AFDA)****One Credit**

This course is designed for students who have successfully completed the standards for Algebra I. Within the context of mathematical modeling and data analysis, students will study functions and their behaviors, systems of inequalities, probability, experimental design and implementation, and analysis of data. Data will be generated by practical applications arising from science, business, and finance. Students will solve problems that require the formulation of linear, quadratic, exponential, or logarithmic equations or a system of equations. A course sequence of Algebra I, Geometry, and AFDA satisfies the math requirements of the Standard diploma; a course sequence of Algebra I, Geometry, AFDA, and Algebra II satisfies the math requirements of the Advanced Studies diploma.

**PA3134 ALGEBRA, FUNCTIONS, AND DATA ANALYSIS PROJECT AIM****One Credit**

Same as 31340 except the course is taught through Project AIM.

**31350 ALGEBRA II****One Credit**

Algebra II provides a thorough treatment of algebraic concepts through the study of functions, polynomials, rational expressions, complex numbers, exponential and logarithmic equations, arithmetic and geometric sequences and series, and data analysis. Emphasis is placed on the mechanics of algebra with real world applications and modeling. A transformational approach to graphing is used with families of functions. Numerical, graphical, and algebraic representations and solutions will be emphasized. Graphing utilities, especially graphing calculators, are integral to the course. **Students are required to take the Standards of Learning End of Course Test.**

**PA3135 ALGEBRA II PROJECT AIM****One Credit**

Same as 31350 except the course is taught through Project AIM.

**3135H ALGEBRA II HONORS****One Credit**

The depth and level of understanding and application expected of students extends beyond that of the standard Algebra II course. **Students are required to take the Standards of Learning End of Course Test.**

**31360 GRADE 12 MATHEMATICS CAPSTONE****One Credit**

This course contains high-interest contextualized content designed to give certain students an additional boost for competent and successful entry into college and careers. The course will add to students' preparation for college and the workplace by 1) enhancing skills in number and quantity, functions and algebra, geometry, and statistics and probability; and 2) simultaneously reinforcing readiness skills and dispositions in adaptability and flexibility, creativity and innovation, leadership, team work, collaboration, and work ethic. The mathematics capstone course is designed for high school seniors who have satisfactorily completed the required mathematics courses based on the Standards of Learning including Algebra, Functions, and Data Analysis or Algebra II; who have earned at least two verified credits in mathematics; and- are college intending, but may not be fully college ready. For students who have successfully completed Algebra II, this course may serve as the fourth mathematics credit counting toward the Advanced Studies diploma.

**31370 ALGEBRA II AND TRIGONOMETRY****One Credit**

This accelerated course addresses all of the Algebra II and Trigonometry Standards of Learning. **Students are required to take the Algebra II Standards of Learning End of Course Test.**

**31430 GEOMETRY****One Credit**

This course emphasizes two- and three-dimensional reasoning skills, coordinate and transformational geometry, and the use of geometric models to solve problems. Course content includes properties of geometric figures, trigonometric relationships, and reasoning to justify conclusions. Methods of justification include paragraph proofs, two-column proofs, indirect proofs, coordinate proofs, algebraic methods, and verbal arguments. A variety of applications and general problem-solving techniques, including algebraic skills, will be used. Graphing calculators will be used to assist in teaching and learning. **Students are required to take the Standards of Learning End of Course Test.**

**PA3143 GEOMETRY PROJECT AIM****One Credit**

Same as 31430 except the course is taught through Project AIM

**3143H GEOMETRY HONORS****One Credit**

The depth and level of understanding and application expected of students extends beyond that of the standard Algebra II course. **Students are required to take the Standards of Learning End of Course Test.**

**31440 GEOMETRY PART 1****One Elective Credit**

Geometry Part 1 is the first of a two-course sequence designed to provide additional instructional time for students to develop, understand, and apply the concepts and skills of Geometry. The complete Geometry curriculum is taught over the span of the two-course sequence. **To earn a math credit meeting graduation requirements, students must successfully complete Part 2 of the two-course sequence.**

**31450 GEOMETRY PART 2****One Credit**

Geometry Part 2 is the second of a two-course sequence designed to provide additional instructional time for students to develop, understand, and apply the concepts and skills of Geometry. The complete Geometry curriculum is taught over the span of the two-course sequence. Geometry Part 2 includes a

review of the Geometry Part 1 content. **Students are required to take the Standards of Learning End of Course Test.**

**31500 TRIGONOMETRY/ADVANCED ALGEBRA One Credit**

This course extends Algebra II concepts with an emphasis on functions, theory of equations, graph theory, sequences and series, and conic sections. Trigonometric topics are introduced and fully developed to include triangular and circular definitions of the trigonometric functions, establishing identities, special angle formulas, Law of Sines, Law of Cosines, and solutions of trigonometric equations.

**31620 MATHEMATICAL ANALYSIS/ PRECALCULUS**

**One Credit**

This course develops students' understanding of trigonometry (right triangle and unit circle approaches) and essential precalculus content, including algebraic and transcendental functions, parametric and polar equations, sequences and series, and limits.

**3162V MATHEMATICAL ANALYSIS/PRECALCULUS VVA**

**One Credit**

Same as 31620 except offered through Virtual Virginia.

**DE31621 PRECALCULUS w/TRIGONOMETRY One Credit W**

**Prerequisite: a placement recommendation for Algebra I, Algebra II, and Geometry or equivalent (NRCC will not award credit for both MTH 163 and MTH 166).**

Presents college algebra, analytic geometry, trigonometry, and algebraic exponential, and logarithmic functions.

**3177A AP CALCULUS (AB)**

**One Credit W**

**Prerequisite: Trigonometry/Advanced Algebra (31500) or Mathematical Analysis/Precalculus (31620)**

Content of this college-level course corresponds to the syllabus of the College Board Advanced Placement Program for Calculus AB. This course is roughly equivalent to a first semester college calculus course devoted to topics in differential and integral calculus, including concepts and skills of limits, derivatives, definite integrals, and the Fundamental Theorem of Calculus. Students who successfully complete this course and the AP examination may be eligible to receive college credit. **Students are expected to take the Advanced Placement exam at the end of the course.**

**3177V AP CALCULUS (AB) VVA**

**One Credit W**

Same as 3177BA except offered through Virtual Virginia.

**3178A AP CALCULUS (BC)**

**One Credit W**

**Prerequisite: Trigonometry/Advanced Algebra (31500) or Mathematical Analysis/Precalculus (31620); and DE31995 or AP Calculus AB (Recommended)**

Content of this college-level course corresponds to the syllabus of the College Board Advanced Placement Program for Calculus BC. This course is roughly equivalent to both first and second semester college calculus courses and extends the content learned in AB to different types of equations and introduces the topic of sequences and series. Topics in differential and integral calculus include concepts and skills of limits, derivatives, definite integrals, the Fundamental Theorem of Calculus, and series. Students who successfully complete this course and the AP examination may be eligible to receive college credit. **Students are expected to take the Advanced Placement exam at the end of the course.**

**3178V VIRTUAL AP CALCULUS (BC) VVA One Credit W**

Same as 3178CA except offered through Virtual Virginia.

**3185A AP COMPUTER SCIENCE**

**One Credit W**

**Prerequisite: Algebra II**

Content of this college-level course corresponds to the syllabus of the College Board Advanced Placement Program for Computer Science A. This course is equivalent to a first-semester, college-level course in computer science. Topics include problem solving, design strategies and methodologies, organization of data (data structures), approaches to processing data (algorithms), analysis of potential solutions, and the ethical and social implications of computing. The course emphasizes both object-oriented and imperative problem solving and design using Java language. Students who successfully complete this course and the AP examination may be eligible to receive college credit. **Students are expected to take the Advanced Placement exam at the end of the course.**

**3192A AP STATISTICS**

**One Credit W**

**Prerequisite: Algebra II**

Content of this college-level course corresponds to the syllabus of the College Board Advanced Placement Program for Statistics. This course is equivalent to a one-semester, introductory, non-calculus-based college course in statistics. The course introduces students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. There are four themes in the AP Statistics course: exploring data, sampling and experimentation, anticipating patterns, and statistical inference. Students who successfully complete this course and the AP examination may be eligible to receive college credit. **Students are expected to take the Advanced Placement exam at the end of the course.**

**3192V AP STATISTICS VVA**

**One Credit W**

Same as 3192A except offered through Virtual Virginia.

**DE31995 DUAL-ENROLLMENT CALCULUS I**

**One Credit W**

**Prerequisite: Trigonometry/Advanced Algebra (31500) or Mathematical Analysis/Precalculus (31620)**

Presents analytic geometry and the calculus of algebraic and transcendental functions including the study of limits, derivatives, differentials, and introduction to integration along with their applications. Designed for mathematical, physical and engineering science programs. **4 NRCC credits for MTH 173.**

**DE31996 DUAL-ENROLLMENT CALCULUS II**

**One Credit W**

**Prerequisite: DE31995 or equivalent**

Continues the study of analytic geometry and the calculus of algebraic and transcendental functions including rectangular, polar, and parametric graphing, indefinite and definite integrals, methods of integration, and power series along with applications. Designed for mathematical, physical, and engineering science programs. **4 NRCC credits for MTH 174.**

**32000 COMPUTER SCIENCE**

**One Elective Credit**

The Java programming language is used to write programs to solve problems. Topics include decision making, loops, simple sorts, algorithms and arrays.

**32010 ALGEBRA READINESS**

**One Elective Credit**

This course supports students who are not yet prepared to complete Algebra I successfully, especially those who did not pass the Math 8 SOL test. Using diagnostic assessment and an intervention curriculum, this course will provide intensive, targeted remediation.

**DE3230 DUAL-ENROLLMENT PRE/APPLIED CALCULUS**

**One Credit W**

**Prerequisite: Trigonometry/Advanced Algebra (31500) or Mathematical Analysis/Precalculus (31620)**

Precalculus presents college algebra, matrices, and algebraic, exponential, and logarithmic functions. Applied Calculus presents matrices, limits, continuity, differentiation of algebraic and

transcendental functions with applications, and an introduction to integration. **6 NRCC credits for MTH 163 (3) and MTH 271 (3)**

## SCIENCE

### **42000 EARTH SCIENCE I PART I (2 YR SEQ. PART I)**

#### **One Elective Credit before completion of Part II**

Earth Science I, Part I is the first of a two-course sequence designed to help students understand and apply the skills and concepts of Earth Science I at a less rigorous pace. The complete curriculum is covered over the span of the two courses. **NOTE:** To earn credit toward meeting graduation requirements using this course, students must also complete Part II of the two-course sequence.

### **42010 EARTH SCIENCE I PART II One Earth Science Credit**

Earth Science I, Part II follows Earth Science I, Part I, and is designed to help students understand and apply the skills and concepts of Earth Science I at a less rigorous pace. The complete curriculum is covered over the span of two courses. **NOTE:** Students will receive one science credit after completing Earth Science, Part II towards meeting graduation requirements. Students will be required to take the SOL test related to this course.

### **42100 EARTH SCIENCE One Earth Science Credit**

This laboratory course is designed to give the student an understanding of the earth, its processes, history and place in the universe. Major emphasis is on geology, meteorology, oceanography and astronomy. Man's influence on his environment, locally and worldwide, is stressed. **NOTE:** Students will be required to take a SOL test related to this course.

### **PA4210 EARTH SCIENCE PROJECT AIM**

#### **One Earth Science Credit**

Same as 42100 except the course is taught through Project AIM.

### **4210V VIRTUAL EARTH SCIENCE VVA**

#### **One Earth Science Credit**

Same as 42100 except the course is offered through Virtual Virginia.

### **4210H EARTH SCIENCE HONORS One Earth Science Credit**

This course is designed for students who excel in the sciences. Curriculum will cover Geology, Meteorology, Oceanography and Astronomy. Research topics are used to improve students' research techniques, to teach them that not all answers are in encyclopedias. Current events are also used to give students a broader application. The class will move at a more rapid pace in order to create more class time for the additional activities. **NOTE:** Students will be required to take an SOL test related to this course.

### **42200 EARTH SCIENCE II ADVANCED SURVEY**

#### **METEOROLOGY One Earth Science Credit**

#### **Prerequisite: Earth Science I**

This course explores earth systems science through meteorology, the study of the atmosphere. Topics include the movement of air masses, global climate changes, the effects of air pollution, and weather-related phenomenon. An understanding of convection currents, pressure changes, and cloud development will be applied through the study of weather forecasting.

### **42500 EARTH SCIENCE II OCEANOGRAPHY**

#### **Prerequisite: Earth Science I One Earth Science Credit**

The study of the physical and biological processes in Earth's oceans including geography, geology. Topics that will be studied

include History of Oceanography, Navigation, Hydrologic Cycle, Plate Tectonics, Sea Floor (Bathymetry), Chemistry of Sea Water, Atmosphere and the Oceans, Ocean Currents, Waves and Tides, Life in the Water, Life on the Seafloor, Ocean Production and Nutrient Cycling, Coasts, Estuaries and Environmental Issues. GIS (Geographic Information Systems) activities will be incorporated to study these topics, whenever possible.

### **42600 EARTH SCIENCE II ASTRONOMY**

#### **Prerequisite: Earth Science I One Earth Science Credit**

Astronomy is the study of our universe. Throughout the semester, we will study topics such as the life cycles of stars, cosmological theories, our solar system, and recent discoveries. Laboratory investigations will include topics such as stellar classification, star charts, spectra, and parallax. In addition, there will be opportunities to observe the night sky.

### **4270A AP ENVIRONMENTAL SCIENCE One Credit W**

#### **4270L AP ENVIRONMENTAL SCI LAB 1 Elective Credit W**

#### **These two classes must be taken concurrently.**

**Prerequisite: Students should have completed two years of high school laboratory science — one year of life science and one year of physical science (for example, a year of biology and a year of chemistry). Due to the quantitative analysis required in the course, students should also have taken at least one year of algebra. Also desirable (but not necessary) is a course in earth science.**

The AP Environmental Science course is designed to be the equivalent of a one-semester, introductory college course in environmental science, through which students engage with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world. The course requires that students identify and analyze natural and human-made environmental problems, evaluate the relative risks associated with these problems, and examine alternative solutions for resolving or preventing them. Environmental Science is interdisciplinary, embracing topics from geology, biology, environmental studies, environmental science, chemistry, and geography. **NOTE:** The AP exam may be taken at the end of the course to possibly receive college credit.

### **4270V VIRTUAL ADV. PLACEMENT ENVIRONMENTAL**

#### **SCIENCE VVA One Earth Science Credit W**

Same as 4270A except the course is offered through Virtual Virginia.

### **43000 BIOLOGY I PART I (2 YR SEQ. PART I)**

#### **One Elective Credit**

Biology I, Part I is the first of a two-course sequence designed to help students understand and apply the skills and concepts of Biology I at a less rigorous pace. The complete curriculum is covered over the span of the two courses. To earn credit toward meeting graduation requirements using this course, students must also complete Part II of the two-course sequence. **NOTE:** Students earn one elective credit before completion of Part II.

### **43010 BIOLOGY I PART II (2 YR SEQ. PART II)**

#### **One Biology Credit**

Biology I, Part II follows Biology I, Part I, and is designed to help students understand and apply the skills and concepts of Biology I at a less rigorous pace. The complete curriculum is covered over the span of two courses. **NOTE:** Students will receive one science credit after completing Biology, Part II towards meeting graduation requirements. Students will be required to take the SOL test related to this course.

### **43100 BIOLOGY I**

#### **One Biology Credit**

Biology I is a laboratory science course which presents an overview of the diversity of life and the interrelationship of all organisms. Major emphasis is on cytology, genetics,

microbiology, botany, zoology, and ecology. The student should develop an appreciation of the living world, an understanding of biological bases of problems that exist in the world and an understanding of man's place in nature. **NOTE:** Students will be required to take an SOL test related to this course.

**PA4310 BIOLOGY I PROJECT AIM** **One Biology Credit**  
Same as 43100 except the course is taught through Project AIM.

**4310H BIOLOGY HONORS** **One Biology Credit**  
Biology Honors is an enhanced course dealing with an overview of general biology. Emphasis is placed on a systematic approach illustrating overarching conceptual themes that unify life sciences and science, technology, and society interactions. Quantifications of observations in laboratory are stressed with emphasis on more precise and accurate communications of the understanding of biological principles. Content is writing intensive, requiring additional research more in-depth knowledge, and more labs. **NOTE:** Students will be required to take an SOL test related to this course.

**43200 BIOLOGY II ADVANCED SURVEY OF BIOLOGY TOPICS** **One Biology Credit**

**Prerequisite: Biology I**  
Biology II is intended to provide depth and breadth in the biological field. It provides a comparative study of structure and function of living organisms and the means by which they carry out vital life functions. Consideration is given to dilemmas that confront our age, the need for critical thinking and means by which one may gain factual knowledge. Laboratory experience is provided. Topics may include botany, zoology, anatomy and physiology.

**43300 BIOLOGY II ANATOMY/PHYSIOLOGY** **One Biology Credit**  
**Prerequisite: Biology I**

This course is designed for college bound students or students interested in the health occupational fields. Emphasis will be placed on the structure and function of the major body systems. Cytology and histology of organs will be investigated. Bacterial and viral infections affecting the human body will be addressed as well.

**43400 BIOLOGY II ECOLOGY** **One Biology Credit**  
**Prerequisite: Biology I**

Ecology is a study of the complex relationships between the abiotic (non-living) and the biotic organisms, which constitute the different environments on Earth and the effects that humans have on the ecosystems. This is a more in-depth study of the relationship between the interactions of the living and non-living components of the Earth. It's designed for the student to gain more practical field applications of ecology. This is a field course and labs and field trips are an integral component of the course.

**PA4340 BIOLOGY II ECOLOGY PROJECT AIM** **One Biology Credit**  
Same as 43400 except the course is taught through Project AIM.

**43500 BIOLOGY II GENETICS** **One Biology Credit**  
**Prerequisite: Biology I**

This course explores current technological advances in genome and proteome research and how these advances are impacting society through legal, ethical, and social issues. Included in the course are in-depth studies of the principles of Mendelian inheritance, especially in regard to human traits and diseases. An integrated application is on methods for analyzing large molecular biology data sets and their applications to biological problems, and laboratory techniques for production and analysis of genetic information. This course introduces cyberinfrastructure tools, concepts and techniques.

**4370A AP BIOLOGY** **One Credit W**  
**4370L AP BIOLOGY LAB** **One Elective Credit W**  
**These two classes must be taken concurrently.**

**Prerequisite: Students should have successfully completed high school courses in biology and chemistry.**

AP Biology is an introductory college-level biology course. Students cultivate their understanding of biology through inquiry-based investigations as they explore the following topics: evolution, cellular processes — energy and communication, genetics, information transfer, ecology, and interactions. **NOTE:** The AP exam may be taken at the end of the course to possibly receive college credit.

**4370V VIRTUAL ADVANCED PLACEMENT BIOLOGY VVA** **One Biology Credit W**

Same as 4370A except the course is offered through Virtual Virginia.

**DE4700 BIOLOGY I AND II DUAL ENROLLMENT** **Two Biology Credits W**

**Prerequisite: Biology I**

Explores fundamental characteristics of living matter from the molecular level to the ecological community with emphasis on general biological principles. Introduces the diversity of living organisms, their structure, function and evolution. **NOTE:** This course satisfies a science requirement for graduation as well as NRCC's BIO 101 and BIO102 for 8 college credits.

**44100 CHEMISTRY I** **One Chemistry Credit**

**Prerequisites:** Students should also be enrolled in or have successfully completed Algebra II.

This course involves a study of the concepts of chemistry, which are central to an understanding of the physical and chemical properties of matter. Topics include atomic structure, bonding, the Periodic Table, chemical composition, chemical equations, Thermodynamics and the properties of acids, bases, and salts. Laboratory work is designed to illustrate the basic laws of chemistry. **NOTE:** Students will be required to take an SOL test related to this course.

**4410H CHEMISTRY I HONORS** **One Chemistry Credit**

**Prerequisites: math courses through Algebra II or taking Algebra II concurrently.**

This course is intended as a first year Chemistry course for students that are seriously considering continued course work in the sciences. Areas of focus include the same concepts as are listed for Chemistry I but with a more in depth study of these concepts. The typical Chemistry I curriculum will be compacted to provide the opportunity for enrichment topics. This course is an appropriate preparation for AP Chemistry. **NOTE:** Students will be required to take an SOL test related to this course.

**4410V VIRTUAL CHEMISTRY (HONORS) VVA** **One Chemistry Credit**

Same as 44100 except the course is offered through Virtual Virginia.

**44200 CHEMISTRY II** **One Chemistry Credit**

**Prerequisite: Chemistry I**

This is intended to extend the concepts, processes and principles of the Chemistry I course. Laboratory experiences are provided for all areas, with emphasis on qualitative and quantitative techniques. Special areas of focus include molecular structure, organic chemistry, applications of stoichiometry, chemical kinetics and reaction equilibria and the solubility product principle.

**4470A AP CHEMISTRY** **One Credit W**

**4470L AP CHEMISTRY LAB** **One Elective Credit W**  
**These two classes must be taken concurrently.**

**Prerequisites: Successful completion of Algebra II & Chemistry I.** The Chemistry AP course corresponds to the General College Chemistry taught at most colleges and universities. Emphasis will be placed on covering the material completed in a typical college-level course and for success with the AP Chemistry exam. This course is a comprehensive introduction to the various areas of chemistry -stoichiometry, chemical bonding, thermodynamics, atomic structure, gases, liquids, solids, solutions, chemical kinetics, chemical equilibrium, acids and bases, and electrochemistry. There is an emphasis on theories and concepts as illustrated by mathematical application. The course includes an extensive laboratory series to support the concept of the classroom-lecture. **NOTE:** The AP exam may be taken at the end of the course to possibly receive college credit.

**4470V VIRTUAL ADVANCED PLACEMENT CHEMISTRY VVA**  
**One Chemistry Credit W**  
Same as 4470A except the course is offered through Virtual VA.

**45100 PHYSICS I** **One Physics Credit**  
**Prerequisites: Successful completion of Algebra II.**

This first year course covers some of the introductory ideals in classical physics. Because of an emphasis in problem solving and using math to illustrate the concepts, math skills are particularly important. Specifically, the physics topics covered are as follows: motion of objects, collisions of objects, forces of nature, sound and light waves, basic optics, electrical circuits, thermodynamics, and modern physics. The laboratory aspect of class is heavily detail and discovery oriented.

**4510V PHYSICS I (HONORS) VVA** **One Physics Credit**  
**Prerequisite: Successful completion of Algebra II.**

Honors Physics aids students in synthesizing the fundamental concepts and principles concerning matter and energy through the laboratory study of mechanics, wave motion, heat, light, electricity, magnetism, electromagnetism, and atomic and nuclear physics. Students have opportunities to: (1) acquire an awareness of the history of physics and its role in the birth of technology, (2) explore the uses of its models, theories, and laws in various careers, and (3) investigate physics questions and problems related personal needs and social issues. Projects outside the classroom may be assigned each six weeks. Students taking Honors Physics should realize that there is an obligation to do a considerable amount of work outside the classroom, both in individual studies and in group work. Student work will be required outside of class time. **This course is offered through Virtual Virginia.**

**4573V VIRTUAL AP PHYSICS I** **One Credit W**  
**Prerequisites: Successful completion of Geometry, concurrently enrolled in Algebra II.**

AP Physics 1 is an Algebra-Based course equivalent to a first-semester college course in algebra-based physics, but designed to be taught over a full academic year to enable AP students to develop deep understanding of the content and to focus on applying their knowledge through inquiry labs. Student investigations emphasize student-centered inquiry instruction and learning. Inquiry investigations foster student engagement in the practices of science through experimenting, analyzing, making conjectures and arguments, and solving problems in a collaborative setting, where students direct and monitor their progress. The full year also allows time for inclusion of physics content specified by state standards. The course covers Newtonian mechanics (including rotational dynamics and angular momentum); work, energy, and power; and mechanical waves and sound. It also introduces electric circuits. **This course is offered through Virtual Virginia.**

**4574V VIRTUAL AP PHYSICS II** **One Credit W**  
**Prerequisite: AP Physics I**

AP Physics II is an algebra-based, introductory college-level physics course that explores topics such as fluid statics and dynamics; thermodynamics with kinetic theory; PV diagrams and probability; electrostatics; electrical circuits with capacitors; magnetic fields; electromagnetism; physical and geometric optics; and quantum, atomic, and nuclear physics. Through inquiry-based learning, students will develop scientific critical thinking and reasoning skills. **This course is offered through Virtual Virginia.**

**4571A AP PHYSICS C** **One Credit W**  
**4571L AP PHYSICS C LAB** **One Elective Credit W**  
**These two classes must be taken concurrently.**

This course serves as the foundation in physics for students majoring in the physical sciences or engineering. The sequence is parallel to or preceded by mathematics courses that include calculus.

**DE4701V VIRGINIA AEROSPACE SCIENCE AND TECHNOLOGY SCHOLARS PROGRAM (VASTS) Virtual**  
**Grade Level 11** **One Science Elective Credit W**

The Virginia Aerospace Science and Technology Scholars (VASTS) program is an interactive on-line science, technology, engineering and mathematics learning experience, highlighted by a seven-day residential summer academy at NASA Langley Research Center in Hampton, Virginia. Students selected to participate in the program are immersed in NASA-related research through interaction with scientists, engineers and technologists. The program is a partnership between the Virginia Space Grant Consortium and NASA Langley Research Center with assistance from the Virginia Department of Education. NASA Johnson Space Center is providing the online learning modules. Students participating in the distance learning coursework and completing the Summer Academy program will receive one weighted science elective credit. Students may receive up to five college credits, at no cost to them, from Thomas Nelson Community College depending upon their successful completion of the online course and Summer Academy program.

- Online Course: MECH 100 Introduction to Aerospace Engineering Technology– 2.0 credits
- Summer Academy: MECH 297 Cooperative Education in Mechanical Engineering Technology – 3.0 credits.

While there is no charge for this course, any travel or internet expenses are the responsibility of the student. **Formerly DE9840V. This course is offered virtually.**  
<http://vsgc.odu.edu/VASTS/studentsapplicationinstructions.html>

**DE4702V VIRGINIA EARTH SYSTEM SCIENCE SCHOLARS PROGRAM (VESSS) Virtual**  
**Grade Level 11-12** **One Science Elective Credit W**

The Virginia Earth System Science Scholars (VESSS) program is an interactive on-line science, technology, engineering and mathematics learning experience, highlighted by a seven-day residential summer academy at NASA Langley Research Center in Hampton, Virginia. Students selected to participate in the program are immersed in NASA-related research through interaction with scientists, engineers and technologists. The program is a partnership between the Virginia Space Grant Consortium and NASA Langley Research Center with assistance from Hampton University. Students participating in the distance learning coursework and completing the Summer Academy program will receive one weighted science elective credit. Students may receive up to four college credits, at no cost to them, from Thomas Nelson Community College depending upon their successful completion of the online course and Summer Academy program. **This course is offered virtually**

-Online Course: GOL 195 Topics in Geology – 3.0 credits  
- Summer Academy: 1.0 credits.  
While there is no charge for this course, any travel or internet expenses are the responsibility of the student.  
<http://www.vsgc.edu/VESS/about.html>

**98120 APPLIED PHYSICS/PRINCIPLES OF TECHNOLOGY II**  
**One Physics Credit**

**Prerequisite: Principles of Technology I, Algebra I, and one other laboratory science course.**

This course focuses on seven technical principles: momentum, waves, energy converters, transducers, radiation, optical systems, and time constants, emphasizing how each principle plays a unifying role in the operation of mechanical, fluid, electrical, and thermal systems in high-technology equipment. This "principles and systems" approach to studying these technical principles provides a foundation for further education and career flexibility as technology and technical systems advance.

**NOTE:** Students who complete Principles of Technology I and Principles of Technology II may use these courses to satisfy one physics credit in laboratory science. A student must complete both courses in the sequence in order to receive laboratory science credit. The sequence of Principles of Technology I and Principles of Technology II will satisfy one unit of credit in laboratory science for physics and one CTE elective credit

<b>FOREIGN LANGUAGE</b>
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**5010V ARABIC I - VVA****One Credit**

In Arabic I, students will develop the ability to communicate through listening, speaking, reading and writing; explore traditions, dress, foods, holidays and customs of Arabic countries; compare Arabic cultures with their own environment, and create a language portfolio. Student work will be required outside of class time. **This course is offered virtually through Virtual Virginia.**

**5011V ARABIC II - VVA****One Credit****Prerequisites: Successful completion of Arabic I is required.**

In this course, students continue to develop their communicative competence by interacting orally and in writing with other Arabic learners and speakers, understanding Arabic oral and written messages, and making oral and written presentations in the Arabic. They will begin to show a greater level of accuracy when using basic language structures, and they are exposed to more complex features of the language. They will continue to focus on communicating about their immediate world and daily activities. Students will read material on familiar topics and write short, directed compositions. The emphasis will continue to be placed on the use of authentic materials to learn about the Arabic culture. **This course is offered virtually through Virtual Virginia.**

**5012V ARABIC III - VVA****One Credit****Prerequisites: Successful completion of Arabic I and II is required.**

In this course, students continue to develop their communicative competence by interacting orally and in writing with other Arabic learners and speakers, understanding Arabic oral and written messages, and making oral and written presentations in the Arabic. They will begin to show a greater level of accuracy when using basic language structures, and they are exposed to more complex features of the language. They will continue to focus on communicating about their immediate world and daily activities. Students will read material on familiar topics and write short, directed compositions. The emphasis will continue to be placed on the use of authentic materials to learn about the Arabic culture. **This course is offered virtually through Virtual Virginia.**

**51100 FRENCH I****One Credit**

This beginning level course concentrates on conversational approach to the language, in preparation, for example, for travel and tourism or business associations. Student acquisition of practical vocabulary and grammatical concepts provide a basis for simple listening, speaking, reading and writing. Additionally, students will begin to learn about France and other francophone countries. The course provides the linguistic understanding of the language in preparation for further scholarship. **ONLY BHS AND CHS**

**5110V FRENCH I VVA****One Credit**

The course consists of oral and written practice while studying vocabulary, grammar and French culture. Reading, writing, speaking, and listening are introduced. Emphasis is placed on listening and speaking skills. Students learn conversational dialogue based on everyday patterns. Students who are enrolled in a Virtual Virginia World Language course will be required to take a nationally recognized examination in their language as part of this course. Student work will be required outside of class time. **This course is offered virtually through Virtual Virginia.**

**51200 FRENCH II****One Credit****Prerequisites: C average or better in French I**

The second year of French will further develop speaking, listening, reading, and writing skills, broadening the formal study of grammar and vocabulary. Students will continue to learn about

France and other francophone countries. Much of the class will be conducted in French. **ONLY BHS AND CHS**

**5120V FRENCH II VVA****One Credit****Prerequisites: C average or better in French I**

The course consists of oral and written practice while studying vocabulary, grammar and French culture. While speaking and listening skills continue to be emphasized, students will also increase their reading and writing skills. Students will begin to communicate more fluently in French, by learning and practicing more advanced concepts in grammar and vocabulary. Students who are enrolled in a Virtual Virginia World Language course will be required to take a nationally recognized examination in their language as part of this course. Student work will be required outside of class time. **This course is offered virtually through Virtual Virginia.**

**51300 FRENCH III****One Credit****Prerequisites: C average or better in French II**

This course will introduce advanced grammatical structures and vocabulary and encourage creative expression as students both write short compositions and give oral presentations on a variety of topics. Students will continue to read in French, with an introduction to French literature and history. The class will be conducted almost entirely in French. **ONLY BHS AND CHS**

**51400 FRENCH IV****One Credit****Prerequisites: C average or better in French III**

In this course students will continue to improve their listening, speaking, reading, and writing skills through the study of more complex grammatical structures and vocabulary, as well as an artistic, literary, and historical survey of France. Students will continue to study other francophone countries as well. The class is conducted almost entirely in French. **ONLY BHS AND CHS**

**51500 FRENCH V****One Credit****Prerequisites: C average or better in French IV**

This level French course continues to reinforce the grammar and structures of French IV. The material will focus on French conversation, literature from French authors, cultural and current events, and listening activities to increase comprehension. The class is conducted entirely in French. **ONLY BHS AND CHS**

**5170A AP FRENCH LANGUAGE AND CULTURE****One Credit W****Prerequisites: C average or better in French IV**

This course is designed to prepare students for the AP French Language and Culture examination. Students will continue with a broader as well as a deeper study of French and francophone literatures, history, and culture. All four language skills (listening, speaking, reading, and writing) are developed through the use of a variety of materials. The class is conducted entirely in French.

**5170V AP FRENCH LANGUAGE AND CULTURE VVA****One Credit W****Prerequisites: C average or better in French IV**

The AP French Language and Culture course is designed to prepare students to take the AP French Language and Culture Test in May. The course is a rigorous college level course equivalent to that of a third year course in college. Students should have a strong knowledge of grammar and vocabulary as well as good listening, speaking, reading and writing skills. All instruction, written and verbal communication will be conducted almost exclusively in French. A variety of authentic audio, video and written texts are included. Students will listen to songs, narrations of newspaper and magazine articles, dictations, news reports, movie reviews and other types of sound recordings. Written texts include literature and newspaper and magazine articles. Students will develop speaking skills through verbal interaction with the instructor. Speaking activities include role-plays, oral reports, speeches and picture story telling. Writing a

variety of compositions, answering essay questions on assignments and tests and journal writing will enhance writing skills. Students who are enrolled in a Virtual Virginia World Language course will be required to take a nationally recognized examination in their language as part of this course. Student work will be required outside of class time. **This course is offered virtually through Virtual Virginia.**

#### **52100 GERMAN I** **One Credit**

This introductory course concentrates on the acquisition of practical vocabulary and grammatical concepts to provide a basis for simple listening, speaking, reading and writing skills. Aspects of German culture will be explored. The course stresses fundamental skills and knowledge that provides a basic preparation for travel and tourism and the linguistic understanding of language for further scholarship. **ONLY BHS**

#### **52200 GERMAN II** **One Credit**

**Prerequisites: C average or better in German I**

The second year of German will further develop the four basic communications skills (speaking, listening, reading, and writing) skills by broadening the formal study of grammar and continued vocabulary building. The study of German culture will continue and students will use original sources as reading materials. **ONLY BHS**

#### **52300 GERMAN III** **One Credit**

**Prerequisites: C average or better in German II**

This course will review previously learned grammar and present advanced grammatical structures such as passive and subjunctive forms of verbs. Students will extend their vocabulary, be introduced to more challenging literature, and be expected to apply good conversational skills. All four communication skills (reading, writing, speaking, and listening) are stressed. **ONLY BHS**

#### **52400 GERMAN IV** **One Credit**

**Prerequisites: C average or better in German III**

In this course students will continue to improve their listening, speaking, reading, and writing skills through the application of more complex grammatical structures and vocabulary. Students will study original German literature and write about and discuss a variety of topics including German culture, history and politics. **ONLY BHS**

#### **52500 GERMAN V** **One Credit**

**Prerequisites: C average or better in German IV**

This level German course continues to reinforce the grammar and structures of German IV. The material will focus on German conversation, literature written in German, cultural, historical and current events, as well as, listening activities to increase comprehension. **ONLY BHS**

#### **5310V LATIN I VVA** **One Credit**

Students begin to develop the cultural understanding and linguistic performance skills necessary to experience the culture of the classical world. Students will gain greater perspective of the present by examining the culture and language of the Romans in areas such as history, government, literature, art, architecture, philosophy, and religion. As students begin to understand the impact of Ancient Rome on the present, English vocabulary skills and an understanding of the structure of the language begin to develop. Students are encouraged to find examples of Roman culture, mythology, and language still being used in our modern world. Students who are enrolled in a Virtual Virginia World Language course will be required to take a nationally recognized examination in their language as part of this course. Student work will be required outside of class time. **This course is offered virtually through Virtual Virginia.**

#### **5320V LATIN II VVA** **One Credit**

**Prerequisites: C average or better in Latin I**

Second year Latin students will continue to study the basic corpus of Latin grammar in preparation for reading actual Latin texts from a variety of authors. Readings will be integrated with the study of cultural and historical topics. Topics will include the three periods of Roman history, mythology and Roman culture. Grammar and vocabulary will build on the knowledge from Latin I and will include: 3rd, 4th and 5th declension nouns, 3rd declension adjectives, participles, infinitives, gerunds and all tenses of regular verbs, active and passive as well as major irregular verbs. More advanced grammatical constructions will be integrated within the translations and grammar lessons. Students who are enrolled in a Virtual Virginia World Language course will be required to take a nationally recognized examination in their language as part of this course. Student work will be required outside of class time. **This course is offered virtually through Virtual Virginia.**

#### **5330V LATIN III VVA** **One Credit**

**Prerequisites: C average or better in Latin II**

Building upon lessons from Latin II, this course continues to develop the linguistic skills of the language, an understanding of the history of the Greco-Roman civilizations, and an appreciation of the cultural developments of the classical world. Students will expand their knowledge of Latin grammar, strengthen their comprehension and translation skills, enhance their oral and written language, and enrich their English vocabulary. Additionally, students will increase their awareness of the contributions of classical civilization to the Western world and broaden their perspective on life and language. Students who are enrolled in a Virtual Virginia World Language course will be required to take a nationally recognized examination in their language as part of this course. Student work will be required outside of class time. **This course is offered virtually through Virtual Virginia.**

#### **5340V LATIN IV VVA** **One Credit**

**Prerequisites: C average or better in Latin III**

Continuing the exploration of Latin literature and culture, students explore various literary styles and become acquainted with several Latin authors through a survey of Latin literature, a review of major grammatical forms, and continued study of English derivatives. This course will prepare students for the AP Latin: Vergil course. Students who are enrolled in a Virtual Virginia World Language course will be required to take a nationally recognized examination in their language as part of this course. Student work will be required outside of class time. **This course is offered virtually through Virtual Virginia.**

#### **55100 SPANISH I** **One Credit**

This introductory course concentrates on the acquisition of practical vocabulary and grammatical concepts to provide a basis for simple listening, speaking, reading and writing skills. The cultures of Spanish speaking countries will be explored. The course stresses fundamental skills and knowledge that provides a basic preparation for further scholarship.

#### **5510V SPANISH I VVA** **One Credit**

The course consists of oral and written practice while studying vocabulary, grammar and Spanish culture. Reading, writing, speaking, and listening are introduced. Emphasis is placed on listening and speaking skills. Students learn conversational dialogue based on everyday patterns. Students who are enrolled in a Virtual Virginia World Language course will be required to take a nationally recognized examination in their language as part of this course. Student work will be required outside of class time. **This course is offered virtually through Virtual Virginia.**

**55200 SPANISH II** **One Credit****Prerequisites: C average or better in Spanish I**

The second year of Spanish will further develop the four basic communications skills (speaking, listening, reading, and writing) through increased formal study of grammar and continued vocabulary building. Exploration of the culture of Spanish-speaking countries will continue.

**5520V SPANISH II VVA****Prerequisites: C average or better in Spanish I**

The course consists of oral and written practice while studying vocabulary, grammar and Spanish culture. Reading, writing, speaking, and listening are continued and are incorporated with the use of the past tense. Emphasis is placed on composition and reading skills in this level. Students will read and analyze conversational dialogue and written material based on everyday patterns, as well as continue with their speaking and listening skills. Students who are enrolled in a Virtual Virginia World Language course will be required to take a nationally recognized examination in their language as part of this course. Student work will be required outside of class time. **This course is offered virtually through Virtual Virginia.**

**55300 SPANISH III****One Credit****Prerequisites: C average or better in Spanish II**

This course will emphasize an in-depth cultural study of the target countries by means of oral and written expressions, including authentic materials. Previously-learned grammar will be reviewed and advanced grammatical studied. Vocabulary will be introduced and students will apply their understanding of the Spanish language through reading, writing, and speaking in Spanish.

**5530V Spanish III VVA****One Credit****Prerequisites: Successful completion of 5520V or C average or better in Spanish II**

This course builds upon the foundation established in Virtual Virginia's Spanish II course. It first reviews key grammar topics including the present, preterite, and imperfect tenses. New lists of vocabulary will be introduced expand students' ability to describe the world around them. Students will learn the future, conditional, present perfect, the pluperfect, present subjunctive, and the pluperfect subjunctive verb tenses. In addition, students will learn demonstratives, commands, and comparisons. The course further develops grammar, syntax, and communication skills. **This course is offered virtually through Virtual Virginia.**

**55400 SPANISH IV****One Credit****Prerequisites: C average or better in Spanish III**

In this course students will continue to improve their listening, speaking, reading, and writing skills through the application of more complex grammatical structures and vocabulary and the study of authentic resources. Students will study original selections from classical and contemporary literature, history and fine arts. Additionally, students will continue to study Hispanic culture.

**5540V SPANISH IV VIRTUAL****One Credit****Prerequisites: C average or better in Spanish III**

Spanish IV is a continuation of the advanced courses. Students enrolled in this course have completed at least three years of language study and have acquired some proficiency in the Spanish language. The goal is to develop a higher proficiency using the language as extensively as possible. Literary selections, authentic materials will be used as well as class discussions, oral presentations and technology-based assessments. Essays and informal writings are also an integral part of the program. Students who are enrolled in a Virtual Virginia World Language course will be required to take a nationally recognized

examination in their language as part of this course. Student work will be required outside of class time.

**55500 SPANISH V****One Credit****Prerequisites: C average or better in Spanish IV**

This level Spanish course continues to reinforce the grammar and structures of Spanish IV. The material will focus on Spanish conversation, literature from Spanish authors, cultural and current events, and listening activities to increase comprehension.

**55600 SPANISH VI****One Credit****Prerequisites: C average or better in Spanish V**

This level Spanish course continues to reinforce the grammar and structures of Spanish V. The material will focus on Spanish conversation, literature from Spanish authors, cultural and current events, and listening activities to increase comprehension.

**5570A ADV. PLACEMENT SPANISH LANGUAGE****One Credit W****Prerequisites: C average or better in Spanish IV**

This course prepares students for the Advanced Placement Spanish Language examination. The course is equivalent to third year college Spanish course in writing and conversation. All four language skills (speaking, listening, reading, and writing) are developed through a variety of materials and the use of the Spanish language for active communication is emphasized. Extensive grammar review, vocabulary building, listening comprehension practice and oral testing are key components of the course. Class will be conducted in Spanish. Students are expected to be highly motivated and with a level of maturity to explore in-depth cultural, historical, and political aspects of the Spanish language.

**5570V AP SPANISH LANGUAGE VVA****One Credit W****Prerequisites: C average or better in Spanish IV**

Advanced Placement Spanish Language students practice perfecting their Spanish speaking, listening, reading, and writing skills. They study vocabulary, grammar, and cultural aspects of the language, and then apply lessons in extensive written and spoken exercises. By the end of the course, students will have an expansive vocabulary and a solid, working knowledge of all verb forms and tenses. The equivalent of a college-level language course, Advanced Placement Spanish Language prepares students for the Advanced Placement Exam and for further study of Spanish language, culture, or literature. Students who are enrolled in a Virtual Virginia World Language course will be required to take a nationally recognized examination in their language as part of this course. Student work will be required outside of class time. **This course is offered virtually through Virtual Virginia.**

**57100 ESL I (ENGLISH AS A SECOND LANGUAGE)****One Credit**

This course is designed to teach English to students whose first language is not English. The course focuses on acquiring skills in listening, speaking, reading, and writing and emphasizes vocabulary development and English grammar and word order (syntax). Students practice oral communication and develop listening comprehension by learning sounds, intonation, and rhythm. Students also learn skills to help them adjust to their new situation. Students qualify for this course based on their performance on an English language assessment. **NOTE:** This introductory course is designed for students who are beginning to learn to speak English. The offering is in keeping with the Virginia State Board of Education's recognition of ESL as a foreign language for high school graduation. Students may earn a foreign language credit for the course. However, this course may not satisfy foreign language requirements at some colleges and universities. Also, for an ESL course to earn a foreign language

credit, it must be taught by a certified ESL teacher and be scheduled as a course.

### 57200 ESL II (ENGLISH AS A SECOND LANGUAGE)

#### One Credit

Students qualify for this course based on their performance on an English language assessment. The second year of ESL will further develop the four basic communications skills (speaking, listening, reading, and writing) by broadening the formal study of grammar and continued vocabulary building. Students will continue to develop their listening and reading comprehension and practice oral communication. They will develop their writing skills to communicate in their content classes and prepare for the Grade 11 Writing EOC state SOL assessment. **NOTE:** Students may be assessed to enter this course without taking ESL I. This offering is in keeping with the Virginia State Board of Education's recognition of ESL as a foreign language for high school graduation. Students may earn a foreign language credit for the course. However, this course may not satisfy foreign language requirements at some colleges and universities.

### 57300 ESL III (ENGLISH AS A SECOND LANGUAGE)

#### One Credit

This course will introduce advanced grammatical structures and vocabulary and encourage creative expression as students both write short compositions and give oral presentations on a variety of topics. Students will continue to read in English, with a focus on American Literature and authentic informational and functional texts. Vocabulary development will also be a key component of this course. **NOTE:** Students may be assessed to enter this course without taking ESL I or II. This offering is in keeping with the Virginia State Board of Education's recognition of ESL as a foreign language for high school graduation. Students earn a foreign language credit for the course. However, this course may not satisfy foreign language requirements at some colleges and universities.

### 57310 ESL IV (ENGLISH AS A SECOND LANGUAGE)

#### One Credit

In this course students will continue to improve their listening, speaking, reading, and writing skills through the study of more complex grammatical structures and vocabulary. Students will read a wide variety of fiction, informational, and functional texts and extend writing skills through composing, revising, and editing formal compositions. **NOTE:** This offering is in keeping with the Virginia State Board of Education's recognition of ESL as a foreign language for high school graduation. Students earn a foreign language credit for the course. However, this course may not satisfy foreign language requirements at some colleges and universities.

### 5810V CHINESE I VVA

#### One Credit

In this course offered through Virtual Virginia, students develop the ability to communicate about themselves and their immediate environment using simple sentences containing basic language structures. This communication is evidenced in all four language skills – listening, speaking, reading and writing – with emphasis on the ability to communicate orally and in writing. Students begin to explore and study the themes of Personal and Family Life, School Life, Social Life, and Community Life. **NOTE:** Students who are enrolled in a Virtual Virginia World Language course will be required to take a nationally recognized examination in their language as part of this course. Student work will be required outside of class time. **This course is offered virtually through Virtual Virginia.**

### 5820V CHINESE II VVA

#### One Credit

**Prerequisites: Successful completion of Chinese I**

In this course offered through Virtual Virginia, students continue to develop the ability to communicate about themselves and their

immediate environment using simple sentences containing basic language structures. This communication is evidenced in all four language skills – listening, speaking, reading and writing – with emphasis on the ability to communicate orally and in writing. At Intermediate-Low proficiency level, Students begin to expand their study on new themes of Personal and Family Life, School Life, Social Life, and Community Life. While some familiar themes and topics from Level I may reoccur, the spiral character of the theme-based instruction requires students to demonstrate their communicative skills and sophistication at a new developmental level. **NOTE:** Students who are enrolled in a Virtual Virginia World Language course will be required to take a nationally recognized examination in their language as part of this course. Student work will be required outside of class time. **This course is offered virtually through Virtual Virginia.**

### 5830V CHINESE III VVA

#### One Credit

**Prerequisites: Successful completion of Chinese I and II**

In this course offered through Virtual Virginia, students continue to develop and refine their proficiency in all four language skills - listening, speaking, reading, and writing - with emphasis on the ability to interact orally and in writing. They communicate using more complex language structures on a variety of topics, moving from concrete to more abstract concepts. At this level, students comprehend the main ideas of the authentic materials that they read and hear, and they are able to identify significant details when the topics are familiar. Students gain a deeper understanding of the world around them while studying Rights and Responsibilities, Future Plans and Choices, Teen Culture, Environment, and Humanities. While some familiar themes and topics from Levels I and II may reoccur, the spiral character of the theme-based instruction requires students to demonstrate their communicative skills and sophistication at a new developmental level. **NOTE:** Students who are enrolled in a Virtual Virginia World Language course will be required to take a nationally recognized examination in their language as part of this course. Student work will be required outside of class time. **This course is offered virtually through Virtual Virginia.**

### 5840V CHINESE IV - VVA

#### One Credit

**Prerequisites: Successful completion of Chinese I, Chinese II, and Chinese III is required.**

Students continue to develop and refine their proficiency in all four language skills - listening, speaking, reading, and writing - with emphasis on the ability to interact orally and in writing. They communicate using more complex language structures on a variety of topics, focusing on abstract concepts. At this level, students comprehend the main ideas of the authentic materials that they read and hear, and they are able to identify significant details when the topics are familiar. Students gain a deeper understanding of the world around them while studying Beijing, facets of China's traditional culture, social life, hobbies, the environment, work and college. **This course is offered virtually through Virtual Virginia.**

### 5860V ADVANCED PLACEMENT CHINESE LANGUAGE AND CULTURE - VVA

#### One Credit

**Prerequisites: Successful completion of Chinese I, Chinese II, Chinese III, and Chinese IV is required.**

This course is designed to prepare high school students for the AP® exam in May. It is a rigorous college level course equivalent to a fourth semester college course in Mandarin Chinese. Students will demonstrate proficiency in presentational, interpersonal and interpretive communication through listening, speaking, reading and writing, explore contemporary and historical Chinese cultures, study a variety of themes related to the Chinese Language and Culture as outlined by the College Board, broaden their global perspectives and compare Chinese

cultures with their own environment. **This course is offered virtually through Virtual Virginia.**

**59900 ASL I: AMERICAN SIGN LANGUAGE One Credit**

This course introduces students to the history of American Sign Language (ASL) and the Deaf Community in the U.S. and beyond. It promotes an awareness of deaf culture as well as development of the language. Students have an opportunity to succeed in a hands-on, visual-based language. Students begin the sequential development of ASL communication skills and develop ASL receptive ("listening") skills and expressive ("talking") signing skills to understand and communicate basic information about themselves and others. Students do classroom presentations in ASL. **NOTE:** This offering is in keeping with the Virginia State Board of Education's recognition of ASL as a foreign language for high school graduation. However, this course may not satisfy foreign language requirements at some colleges and universities. Virginia colleges/universities that accept ASL as a foreign language include Virginia Tech, University of Virginia, Radford University and more. See ASL instructor for list of nation-wide colleges/universities that accept ASL for foreign language admissions credit. **ONLY BHS**

**59950 ASL II: AMERICAN SIGN LANGUAGE One Credit**  
**Prerequisites: C average or better in ASL I**

This course reinforces and expands communication skills and broadens student knowledge of Deaf culture. American Sign Language II builds upon topics, vocabulary, and grammar introduced in ASL I. Students work on interpretation and expressive communication skills in ASL and do various types of classroom presentations. Students are encouraged to communicate about people in a more abstract way and to describe in more detail their school environment. Students continue to learn appropriate cultural behaviors and the history of the U. S. deaf community. **ONLY BHS**

**59970 ASL III: AMERICAN SIGN LANGUAGE One Credit**  
**Prerequisites: C average or better in ASL II**

This course reinforces and expands communication skills and student knowledge of Deaf culture. Students increase their understanding of the language through a variety of literary genres including ASL story-telling and poetry. Students also increase their understanding of the language and culture through the reading of a wide variety of articles, short stories, novels and professional literature. Students continue to develop their language usage skills, both receptively and expressively and are expected to work independently on translations. Students present the translations to the teacher or the class. **ONLY BHS**

**59980 ASL IV: AMERICAN SIGN LANGUAGE One Credit**  
**Prerequisites: C average or better in ASL III**

American Sign Language IV emphasizes correct grammatical and syntactical use and analysis of language. It continues to build on the topics, vocabulary, grammar, and cultural issues developed throughout ASL course sequence. Sign Language IV students may have the opportunity to teach appropriate lessons to preschool, elementary, and/or beginning ASL students. Students in this course are expected to work independently on translations and present the translations to the teacher or the class **ONLY BHS.**

<b>HEALTH AND PHYSICAL EDUCATION</b>
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**70150 DRIVER'S ED CLASSROOM** **No Credit**

Driver's Education is taught as the classroom component of 10th grade Physical Education and meets the required hours of instruction established by the state of Virginia. There is no credit awarded for this classroom component.

**73000 HEALTH & PHYSICAL EDUCATION 9** **One HPE Credit**

Health units include stress management, personal health, first aid and safety, drug education, family life and diseases. The physical education program contributes to the overall mental, emotional, social, and physical growth of each student. Physical education emphasizes personal fitness, individual and team games/sports, and lifetime activity. Beginning with the 2016-2017 school year, units will also include adult and child cardiopulmonary resuscitation (CPR), use of automated external defibrillator (AED), and first aid skills for bleeding, contusions, fractures, and anaphylactic shock.

**PA7300 HEALTH & PHYSICAL EDUCATION 9 PROJECT AIM** **One HPE Credit**

Same as 73000 except the course is taught through Project AIM.

**PA7410 PHYSICAL EDUCATION 10 PROJECT AIM** **One HPE Credit**

Same as 74050 except the course is taught through Project AIM and does not include Driver's Education.

**74050 HEALTH & PHYSICAL EDUCATION 10 WITH DRIVER'S EDUCATION** **One HPE Credit**

The health education course for tenth grade students consists of driver education and the study of health and wellness. This includes family life education, mental health, consumer health, and personal injury prevention. Physical education emphasizes personal fitness, individual and team games/sports, and lifetime activity.

**76400 ADVANCED PHYSICAL EDUCATION** **One Elective Credit**

Advanced physical education includes participation in physical activities that contribute to personal enjoyment and the attainment and maintenance of personal physical activity goals. Students will participate in various forms of exercise including weight lifting, running, agility, core and abdominal training, and flexibility exercises. Preference will be given to 11th and 12th graders. **NOTE:** Due to the fact that this class is a physical conditioning class, it can be repeated for duplicate credits. This course will not count as one of the two required HPE credits.

**76600 PREVENTION AND CARE OF ATHLETIC INJURIES** **One Elective Credit**

This course is designed to provide the student with an introduction to the profession of Athletic Training Topics include legal issues, ethics, injury recognition and management, taping and bracing. The student will also be given the opportunity to become a student aide to the Head Athletic Trainer, assisting in preparation and coverage of practices and games. The student will also have a chance to become CPR/First Aid certified. **NOTE:** This course will not count as one of the two required HPE credits.

**77000 ADAPTIVE PE** **One Elective Credit**  
**Prerequisite: Doctor or Spec Ed Recommendation**

This course consists of an individualized program of exercises and activities for those who are recommended for the class by a doctor. Modified sports activities will be presented to improve the student's limiting condition. Emphasis will be placed on weight training, motor skill development, and individual sports participation. Course difficulty ranges from mild to moderate

depending on the student's physical challenge. **NOTE:** This course will not count as one of the two required HPE credits.

<b>SPECIAL EDUCATION</b>
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**31200 PERSONAL LIVING & FINANCE**

Offered only at ISS and Rivendell

**78220 FUNCTIONAL SCIENCE**

A relevance-based Science course emphasizing basic concepts from Life, Physical and Earth Sciences and driven by the Individual Education Plan.

**78230 FUNCTIONAL SOCIAL STUDIES**

A relevance-based Social Studies course emphasizing basic concepts of citizenship, community, and consumerism, and driven by the Individual Education Plan.

**78580 COMMUNITY BASED INSTRUCTION**

A course which provides students direct instruction in accessing and using community resources (like transportation, libraries, stores, recreation facilities) and basic vocational and job skills.

**NOTE:** Use 7858A for 2<sup>nd</sup> credit attempted in same calendar school year at 4x4 Block Schools.

**78610 ACADEMIC LAB/RESOURCE**

This elective course is structured to provide each student with instruction in specific learning strategies, individualized learning opportunities, and opportunity for tutorial for content classes.

**78710 FUNCTIONAL ENGLISH 9**

A relevance-based English/Language Arts program emphasizing essential reading, writing, and speaking skills and driven by the Individual Education Plan.

**78711 FUNCTIONAL ENGLISH 10**

A relevance-based English/Language Arts program emphasizing essential reading, writing, and speaking skills and driven by the Individual Education Plan.

**78712 FUNCTIONAL ENGLISH 11**

A relevance-based English/Language Arts program emphasizing essential reading, writing, and speaking skills and driven by the Individual Education Plan.

**78713 FUNCTIONAL ENGLISH 12**

A relevance-based English/Language Arts program emphasizing essential reading, writing, and speaking skills and driven by the Individual Education Plan.

**78720 FUNCTIONAL MATH 9**

A relevance-based Math program emphasizing essential consumer, daily living, and functional skills and driven by the Individual Education Plan.

**78721 FUNCTIONAL MATH 10**

A relevance-based Math program emphasizing essential consumer, daily living, and functional skills and driven by the Individual Education Plan.

**78722 FUNCTIONAL MATH 11**

A relevance-based Math program emphasizing essential consumer, daily living, and functional skills and driven by the Individual Education Plan.

**78723 FUNCTIONAL MATH 12**

A relevance-based Math program emphasizing essential consumer, daily living, and functional skills and driven by the Individual Education Plan.

**78960 OCCUPATIONAL WORK & FAMILY STUDIES I/ DEVELOPMENT****One Credit**

Students will gain knowledge needed to increase independent functioning within the community and the home. Functional math and Language skills, personal financing, job skills, self-care, self-advocacy, and appropriate social skills will be taught through numerous modes of hands-on activities. Leisure skills and family unit responsibilities will also be taught to ensure self-fulfillment and the sense of belonging to community, home, school, and work. **NOT FOR VOCATIONAL CREDIT OR VOCATIONAL TESTING.**

**78961 OCCUPATIONAL WORK & FAMILY STUDIES II/ DEVELOPMENT****One Credit**

**Continuation of 82220. NOT FOR VOCATIONAL CREDIT OR VOCATIONAL TESTING.**

<b>FINE ARTS</b>
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**91200 ART FOUNDATIONS I One Credit**

This course is designed as an entry-level art class and is the prerequisite for the more advanced art classes. In this course, the student will explore art as it relates to history, to the environment and to his/her own personal experiences. There will be instruction in drawing, painting, ceramics, printmaking, and sculpture using a variety of both 2-D and 3-D media. Art styles and periods will be compared with an emphasis on developing a visual appreciation for one's own art and for the art of others. (Students who have had an art class prior to high school may take a placement test and present a portfolio to possibly qualify for a higher level class.)

**91300 ART II INTERMEDIATE One Credit**

This course is a continuation of Art Foundations I. The focus of this course is for the student to obtain an understanding of art by incorporating the elements and principles of design in their work. Through the study and exploration of art, the student will be motivated to think about visual experiences in the past and present. Emphasis is placed on the further development of the student's drawing and design skills through a variety of 2-D and 3-D media and is designed to expand the student's knowledge of drawing, painting, sculpture, and ceramics while introducing jewelry making, graphics, and research into art history.

**91400 ART III/ADVANCED INTERMEDIATE One Credit**

Advanced Art is a course that follows successful completion of two (2) years of art foundations. (The instructor may make exceptions for students who have completed just 1 year and show both interest and talent.) Advanced students are allowed more time for pursuing individual projects and exploration of media and techniques. A more intense study of art history and visual problem solving will be made.

**91450 ART IV ADVANCED Portfolio Review One Credit**

The course involves intense concentration using advanced skills in their chosen media. Advanced critiques, historic comparisons, and independent research are included.

**91470 ART V PORTFOLIO PREPARATION One Credit Portfolio Review or Teacher Recommendation**

Having achieved training in basic knowledge and experience of two and/or three dimensional media, students will further develop higher level skills in art production esthetics and criticism. Students will join instructor in determining goals and expectations for projects and follow the normal exam procedures.

**9148A ADVANCED PLACEMENT STUDIO ART 2D DESIGN Portfolio Review or Teacher Recommendation One Credit W**

The AP Studio Art Program enables highly motivated students to do college level work in art while still in high school and possibly get college credit. Having achieved training in basic knowledge and experience of two and/or three dimensional media, students will use visual problem solving skills to further explore Color and Design, Drawing, Sculpture and concentrate on 2-D design. In order to receive an AP weighted credit; the student must satisfactorily complete the AP portfolio. To possibly receive college credit, the student must submit their portfolio to the College board and pay the associated fee. Advanced Placement Studio Art requires a more significant commitment of time and effort than other art courses.

**9149A ADVANCED PLACEMENT STUDIO ART 3D DESIGN Portfolio Review or Teacher Recommendation One Credit W**

The AP Studio Art Program enables highly motivated students to do college level work in art while still in high school and possibly get college credit. Having achieved training in basic knowledge

and experience of two and/or three dimensional media, students will use visual problem solving skills to further explore Color and Design, Drawing, Sculpture and concentrate on 3-D design. In order to receive an AP weighted credit; the student must satisfactorily complete the AP portfolio. To possibly receive college credit, the student must submit their portfolio to the College Board and pay the associated fee. Advanced Placement Studio Art requires a more significant commitment of time and effort than other art courses.

**9150A ADVANCED PLACEMENT STUDIO ART/DRAWING PORTFOLIO One Credit W**

**Teacher approval.** The AP Studio Art Program enables highly motivated students to do college level work in art while still in high school and possibly get college credit. Having achieved training in basic knowledge and experience of two and/or three dimensional media, students will use visual problem solving skills to further explore Color and Design, Drawing, Sculpture and concentrate on their drawing portfolio. In order to receive an AP weighted credit; the student must satisfactorily complete the AP portfolio. To possibly receive college credit, the student must submit their portfolio to the College Board and pay the associated fee. Advanced Placement Studio Art requires a more significant commitment of time and effort than other art courses.

**9151A ADVANCED PLACEMENT ART HISTORY One Credit W Art Teacher Recommendation**

The AP Art History class enables highly motivated students to do college level work in art history while still in high school. Upon completion of this course, the student may elect to take a national art history exam with the possibility of earning college credit. (There is a fee for this examination.) Students, who enjoy World History, as well as Art, should find this course interesting.

**9151V AP ART HISTORY VIRTUAL VVA One Credit W**

Same as 9151A except the course is delivered virtually through Virtual Virginia.

**91600 CRAFT DESIGN I One Credit**

This course is offered through Art and Technology Education as an elective for either discipline. The focus will be on creative design and fabrication of functional products. Products may include woodturning, woodworking, crafts, ceramic work with other materials as needed.

**91750 CERAMIC I One Credit**

This course is design as an entry-level art class with a focus on the investigation of Ceramics. Students will explore the process of hand building and wheel throwing (if supplies allow). There will be instruction in slab technique, coil technique, pinch method, glaze application, firing techniques, history of ceramics, and related artist studies. Art critiques will be held (verbal and written), to develop a visual appreciation for one's own art and for the art of others.

**91760 CERAMIC II One Credit**

This course is a continuation of Ceramic I. The focus of this course is for the student to obtain a greater understanding and to increase their knowledge of Ceramics. Further practice will help to develop their hand building and wheel throwing techniques in the quest to become a master at the craft. Art History, historical Potters and Cultural Knowledge will be studied to further the depth of their understanding and enhance their mastery. Art critiques will be held (verbal and written), to develop a higher level of visual appreciation for one's own art and for the art of others.

**91980 INTRODUCTION TO FINE ARTS One Credit**

Introduction to Fine Arts is a course for students interested in art, music, photography, and cinematography. It requires no

prerequisites and is designed for the student who does not plan to continue further study in art or music. The student will study music and art history from the Ancient Egyptians through today's art and musical world, including the arts of photography and cinematography. Students taking this course should hope to gain knowledge in the effects of society on the fine arts through history, and be able to relate his/her personal experiences with that of today's music and art.

**PA9198 INTRO TO FINE ARTS PROJECT AIM One Credit**  
Same as 91980 except the course is taught through Project AIM.

**DE9197V ART/MUSIC APPRECIATION DUAL ENROLLMENT VIRTUAL One Credit W**

This art course introduces art from prehistoric times to the present day. It describes architectural styles, sculpture, photography, printmaking, and painting techniques. This music course increases the variety and depth of the student's interest, knowledge, and involvement in music and related cultural activities. Acquaints the student with traditional twentieth century music literature, emphasizing the relationship music has as an art form with man and society. Increases the student's awareness of the composers and performers of all eras through listening and concert experiences. **NOTE: This course is used for CZ and satisfies NRCC's ART 100 and MUS 121 for 6 college credits.**

**92210 MUSIC HISTORY/LITERATURE One Credit**

This is a non-performance course for students interested in music. It requires no prerequisite and is designed for the student who does not plan to continue further study in music. It is not a prerequisite for other art or music courses. The student will study music as it relates to his/her personal experience and environment. Students will study all periods of music from Medieval to Rock. Instruction will include comparing styles and elements of music with an emphasis on developing listening skills.

**92220 MUSIC APPRECIATION/FUNDAMENTALS OF MUSIC One Credit**

**Prerequisite: Sophomores may be admitted following a consultation with the instructor.** This class provides instruction in the areas of music history, music theory and composition. A basic understanding of music notation and rhythms is desired. This class is recommended for students who have an interest in pursuing music at the collegiate level.

**92250 MUSIC THEORY One Credit**

**Prerequisite: Must be able to read music.** This course provides students with an in-depth study of the materials and structures of music including: form and analysis, basic harmony and theory, and compositional techniques. Students will be given the opportunity to compose.

**92320 BEGINNING BAND One Credit**

Open to students who are interested in beginning instrumental music instruction for wind and percussion instruments. Emphasis is placed on the basic elements of instrumental performance. This class is designed for those students who might want to continue their studies in music. The student is required to attend scheduled rehearsals and concert performances.

**92330 INTERMEDIATE BAND One Credit**

**Prerequisite: Two years of instrumental music** Intermediate Band is a performing group composed of instrumental students. Membership in this group is open to all students who have at least two (2) years of instrumental experience or the recommendation of their middle school director.

**EMHS:** Intermediate Band is a performing group composed of instrumental students. Membership in this group is open to all students who have at least two (2) years of instrumental experience or the recommendation of their middle school director.

Music will range widely in style from classics and serious concert band literature to modern popular music and marching music. Additional materials and topics such as minor scales, transposition, and additional music theory may be included as appropriate. Performances include several concerts each school year, various competitions, football games, parades, and other activities deemed necessary by the director. The student is required to attend scheduled rehearsals and concert performances. Extra rehearsals and individual practice is required.

**BHS:** Intermediate Band is a performing group composed mainly of 9th and 10th grade students. Students must have a minimum of two years of instrumental experience. Performances include three school concerts and district concert festival. Materials covered in concert band include concert literature, basic theory, and history of literature covered in the class.

**CHS:** Intermediate Band is offered during the fall term for all students. All students registering for a band class will be placed into this ensemble until after auditions. Basic musicianship fundamentals will be taught and reviewed in both full and small ensemble settings. Participation and attendance is required for all fall concert, winter concert, and any other scheduled performance, as well as any scheduled after-school rehearsals.

**92340 ADVANCED BAND One Credit**

**Prerequisite: Two years of Instrumental music**

**BHS Prerequisite: Concert Band**

Symphonic Band is a performing group composed of advanced instrumental students. Membership in this group is strictly limited to grades 10-12 by audition. Auditions are held in the spring of each year and requirements include a minimum of: all major scales, chromatic scales, prepared piece, and sight reading. Extra rehearsals and individual practice will be required. Materials covered in symphonic band include concert literature, basic theory, and history of literature covered in the class.

**CHS Prerequisite: Audition only.** Audition includes Major scales, Chromatic Scale, Prepared Piece and Sight Reading. Symphonic Band is offered during the spring term. Students may be admitted to this class only through a successful audition. More advanced musicianship techniques will be explored in a full ensemble setting. Students will be held to the highest standard of musical excellence. Participation and attendance is required for District Band Festival, the spring concert, and any other scheduled performance, as well as any scheduled after-school rehearsals.

**AHS and EMHS:** Advanced Band is a performing group composed of instrumental students. Membership in this group is open to all students who have at least two (2) years of instrumental experience or the recommendation of their middle school director. Music will range widely in style from classics and serious concert band literature to modern popular music and marching music. Additional materials and topics such as minor scales, transposition, and additional music theory may be included as appropriate. Performances include several concerts each school year, various competitions, football games, parades, and other activities deemed necessary by the director. The student is required to attend scheduled rehearsals and concert performances. Extra rehearsals and individual practice is required.

**92450 GUITAR One Credit**

This course is for beginning guitar students. No prior experience is required. The course covers basic music reading, chords, musical terms and symbols.

**92500 SMALL INSTRUMENTAL ENSEMBLE/JAZZ BAND**

**Prerequisite: By Audition Only One Credit**

Jazz Band is a small group restricted to a set instrumentation. Membership is limited to grades 10-12 by audition only. Wind players and percussionists are required to be in the symphonic or

concert band to be eligible for jazz band. Materials include the study of jazz style, literature, history, and improvisation. Performances include winter concert, swing dance, and other requested community events.

#### **92520 SMALL INSTRUMENTAL ENSEMBLE/ PERCUSSION TECHNIQUES**

**One Credit**

**Prerequisite:** Percussion students OR band director's approval. Percussion Techniques is offered during the spring term for students 9-12. Students enrolled in this class will be considered a member of the Symphonic Band and will be required to participate in all concerts and activities scheduled for Symphonic Band. Additionally, students will be required to participate in scheduled performances for percussion ensemble. Focus of this class will be on percussion techniques and performance.

#### **92550 PIANO LAB I**

**One Credit**

**Prerequisite:** Students should have no previous piano experience. This is a beginning level course which will provide students the opportunity to learn piano technique and music reading. Students will acquire knowledge of elements of music as used in music reading and piano technique. Understanding of piano keyboard to acquire a positive attitude and continuing interest in music throughout high school and adult years will be stressed. Class size is limited by the number of available instruments.

#### **92551 PIANO LAB II**

**One Credit**

**Prerequisite:** Students must have successfully completed Unit 8 in Piano Lab I with an "A" average. Students will continue instruction of piano technique, music theory and music reading skills. Students may be accepted into the class by audition. Students auditioning must be able to perform at a comparable skill level to students completing through Unit 8 in Piano Lab I. Class size is limited by the number of available instruments.

#### **92800 SMALL VOCAL ENSEMBLE/CHORALE [AUDITION]**

**One Credit**

Chorale is a performance class whose membership is strictly limited to students in grades 10-12. Students will work on presenting quality public performances. Students will read and sing music with four to eight part harmony, demonstrating excellent vocal and choral techniques.

#### **BHS Prerequisite: One year of Chorus/Band/or other vocal (musical) experience and successful audition.**

Chorale is a performance class whose membership is strictly limited to students in grades 10-12. Students will work on presenting quality public performances. Students will read and sing music with four to eight part harmony, demonstrating excellent vocal and choral techniques. The group will learn music of a moderately difficult level chosen from all major periods. Performances will include two school concerts as well as other community invitations. These students are also eligible for district chorus. Auditions for chorale are held in the spring.

**CHS Prerequisite: Audition Only.** Chorale is a performance class in which students will work on presenting quality public performances. Students will read and sing music with four to eight-part harmonies, demonstrating excellent vocal and choral techniques. The group will perform music of a high difficulty level chosen from all major periods. Performances will include three school concerts as well as other community invitations.

#### **92801 SMALL VOCAL ENSEMBLE/JAZZ CHOIR [AUDITION]**

**One Credit**

**Prerequisite:** One year of Chorus/Band/or other vocal (musical) experience and successful audition. Jazz Choir is strictly limited to students in grades 10-12 by audition. Students

enrolling in this class must enjoy performing jazz and show music for audiences and not be afraid to dance! Students are expected to read music when entering the choir, and must be able to carry their own part in a small ensemble of 16-20. A costume will be worn for performances. Students may audition for District Chorus. Auditions for Jazz Choir are held in the Spring.

#### **92802 SMALL VOCAL ENSEMBLE/MADRIGALS [AUDITION]**

**One Credit**

**Prerequisite: One year of Chorus/Band/or other vocal (musical) experience and successful audition.** Madrigals is strictly limited to students in grades 10-12 by audition. Performances include at least two school concerts plus many community performances. The student will read and perform music in four to eight parts, using advanced vocal and choral techniques. Repertoire will include music mainly from the Renaissance Period. All students in this group are eligible to audition for Senior High District Chorus. Auditions for Madrigals are held in the Spring.

#### **92803 SMALL VOCAL ENSEMBLE/CHAMBER ENSEMBLE**

**One Credit**

**Prerequisite: Audition Only.** This vocal ensemble is open to students in grades 10-12 who have been selected by audition only. This is a performance class which will present quality public performances using the best styles of music literature from major periods emphasized. The student will sing and read music in four to eight-part harmony using good vocal and choral techniques. This class is limited to 20 students.

#### **92804 SMALL VOCAL ENSEMBLE II**

**One Credit**

##### **Teacher Approval Required**

Chorale is an extensive study and performance class whose membership is strictly limited to students in grades 10-12. Students will work on presenting quality public performances. Students will read and sing music with four to eight part harmony, demonstrating excellent vocal and choral techniques.

#### **92805 SMALL VOCAL ENSEMBLE/SWING CHOIR**

**One Credit**

**AHS and BHS Prerequisite: One year of High School Chorus and successful audition.** This is a performance class and quality public performance will be an on-going objective. The group will perform pop, jazz and Broadway show music. The majority of the songs will include choreography. The student will sing and read music using good vocal and choral technique. Performances will include three school concerts as well as community invitations. Extra rehearsals will be required as deemed necessary by the director.

**EMHS Prerequisite: Prior experience in choral work – audition may be required.** This course is open to students in grades nine through twelve. Ninth grade students should have had significant participation in choral work and pass an audition to ascertain the level of performance. Sight singing the full vocal range, utilizing Sol Fege, a technique for the advanced choral student, and music theory building on high school chorus experiences, will be studied. This performance choir studies literature from the four periods of music, as well as contemporary music, pop, jazz and Broadway. Choreography as appropriate for the pieces is included as a part of performance instruction. The class is performance oriented including three school concerts, community invitations to perform, and other opportunities for preparatory experiences. This class may require extra rehearsals.

#### **92850 INTERMEDIATE CHORUS/CONCERT CHOIR**

**[NON-AUDITION]**

**One Credit**

**AHS, BHS and EMHS:** Concert Choir is a non-audition chorus open to any student in grades 9-12. No prerequisite is required for the class other than a genuine desire to sing and learn the

basic concepts of music. It is a performance class and will include at least two major concerts a year, occasional assembly programs and/or community events, and may require some extra rehearsals. The student will begin to learn to read music and will sing music using appropriate vocal/choral techniques. Repertoire will include music from all major periods, styles, and languages.

**CHS:** All students registering for choir will be placed in this class until after auditions.

<b>LOCAL ELECTIVE OFFERINGS</b>
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**98260 STUDENT RESEARCH PROJECT                      One Credit**

Students who participate in a research project during their junior or senior year will work closely with a volunteer mentor from Blacksburg High School, a local university or industry. The student and mentor will collaboratively design an appropriate research project for the student. During the summer, the student will work informally, on a relaxed schedule, with the mentor. In the fall, the student will start the formal research project committing at least three hours a week to the project. The research will continue throughout the winter and spring, culminating in regional science fair participation and the submission of a paper to the Virginia Junior Academy of Sciences. Students may either sign up for this course during the day or 9th period.

**98280 SERVICE LEARNING                                      One Credit**

Service Learning encourages students to practice community volunteerism after school, on weekends, and during the school day. The objective is to instill a spirit of community activism and involvement that will extend beyond high school into adult life. The Service Learning course is a program open to Juniors and Seniors interested in helping community agencies or interested in serving as tutors to peers or to younger students in middle school and elementary schools. It is necessary to document a minimum of 150 clock hours combined with the classroom experience to receive a credit. \*Use 98280A for 2nd credit attempted in same calendar school year at 4x4 block schools.

**98284 LEARNING STRATEGIES                                      One Credit**

This elective course is structured to provide each student with instruction in specific learning strategies, a personalized content curriculum, and independent learning opportunities. The objectives of the course/s will be to provide students an opportunity to practice and apply a variety of Pathway Learning Strategies to enhance their academic success. They also will be provided the opportunity to explore, practice, and apply selected curricular resources to strengthen their academic skills. Use 98284Ar 2nd credit attempted in same calendar school year at 4x4 Block Schools.

**98285 FRESHMAN SEMINAR                                      One Credit**

Freshman Seminar is a class developed for all ninth graders to help provide a positive and successful transition to high school. Students will develop positive connections, interpersonal skills, team leadership negotiations, organizational, problem solving and study skills. The goal of Freshman Seminar is to build a strong foundation for success in high school.

### **MCPS Governor's STEM Academy**

The Governor's STEM Academy is designed to promote student achievement and interest in STEM fields that are related to Advanced Manufacturing. Skill sets required for high demand STEM fields include Machining, Welding, Engineering, Robotics, and Information Technology.

Students who are interested in registering for the MCPS Governor's STEM Academy may do so by choosing a course from one of the following MCPS Fields of study:

**Technical Drawing and Design**  
**Engineering**  
**Precision Machining**  
**Welding**  
**Computer Systems Technology**  
**Computer Information Systems**  
**Robotics**  
**Manufacturing Systems**  
**Architecture and Construction**

Register for a course marked as "Governor's STEM Academy Course" in your school's course catalogue. Requirements for completing the STEM Academy and earning a Governor's STEM Academy Seal will be explained to you in your career and technical course.

You may complete the career and technical course without participating in the Academy.

## **MCPS Governor's STEM Academy Pathways**

### **STEM: Engineering and Technology (PLTW)**

DE8439 Introduction to Engineering Design  
 DE8441 Principles of Engineering  
 DE8442 Computer Integrated Manufacturing  
 DE8430 CIVIL ENGINEERING AND ARCHITECTURE

### **STEM Engineering and Technology (Technical Drawing and Design)**

DE8530 ENGINEERING DESIGN GRAPHICS  
 DE8531 CIVIL ENGINEERING AND ARCHITECTURAL DESIGN GRAPHICS  
 DE8532 ADVANCED ENGINEERING DESIGN GRAPHICS

**OR**

DE8435 Technical Drawing and Design  
 DE8436 Engineering Drawing and Design  
 DE8437 Architectural Drawing and Design  
 DE8438 Advanced Drawing and Design, (optional)

### **STEM: Engineering and Technology**

84210 Technology of Robotics Design  
 84250 Manufacturing Systems I

**Manufacturing: Production**

85390 Precision Machining, DE

85400 Precision Machining II, DE

**OR**

80190 Welding I, DE

80191 Welding II, DE

**Information Technology: Programming and Software Development (Computer Programming)**

66400 Programming

66410 Advanced Programming

**Information Technology: Information Support and Services**

66120 Computer Information Systems, DE

66130 Advanced Computer Information Systems

**Information Technology: Information Support Services**

86220 Computer Systems Technology I

86230 Computer Systems Technology II

86210 Computer Maintenance (Optional)

66700 Information Technology Fundamentals

**Information Technology: Web and Digital Communications**

66300 Design, Multimedia, and Web Technologies

66310 Advanced Design, Multimedia, and Web Technologies

**Information Technology: Network Systems**

66500 Computer Network Software Operations I

66510 Computer Network Software Operations II

**Manufacturing: Manufacturing Production Process Development**

84250 Manufacturing Systems I

84330 Materials and Processes

**Architecture and Construction: Construction**

84310 Construction Technology

84330 Materials and Processes

86010 Carpentry I

86020 Carpentry II

86030 Carpentry III

86040 Cabinetmaking I  
86050 Cabinetmaking II

**Robotics (General Elective)**

98281 Robotics I  
98282 Robotics II  
98283 Robotics III

**Principals of Technology /Applied Physics**

98110 Principals of Technology /Applied Physics I  
98120 Principals of Technology / Applied Physics II

<b>BUSINESS AND INFORMATION TECHNOLOGY</b>
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**61150 PRINCIPALS OF BUSINESS AND MARKETING****One Credit**

Students discover the roles of business and marketing in the free enterprise system and the global economy. Basic financial concepts of banking, insurance, credit, inheritance, taxation, and investments are investigated to provide a strong background as students prepare to make sound decisions as consumers, wage earners, and citizens

**61200 ECONOMICS AND PERSONAL FINANCE****Grade Level 9-12****One Credit**

Students learn how to navigate the financial decisions they must face and to make informed decisions related to career exploration, budgeting, banking, credit, insurance, spending, taxes, saving, investing, buying/leasing a vehicle, living independently, and inheritance. **NOTE: 61200 or 6120V** meets the graduation requirement for Economics and Personal Finance. Starting with 2011-2012 Freshmen class, neither course may be used to meet the graduation requirement for a CTE course or as part of a required CTE sequence. Beginning with the class of 2014-15, this course will be required for graduation and may not be used to meet any other graduation requirement.

**6120V ECONOMICS AND PERSONAL FINANCE VIRTUAL****Grade Level 9-12****One Credit**

Same as 61200 except the course is offered virtually through Virtual Virginia.

**61201V ECONOMICS & PERSONAL FINANCE (Pass/Fail Only)****Grade Level 9-12****One Credit**

Same as 61200 but is taught virtually through MCPS and is Pass/Fail Course only. (This course is set up with a different grading scale than the other classes and does not get included in GPA).

**PA6120 ECONOMICS AND PERSONAL FINANCE****One Credit**

Same as 61200 except the course is taught through Project AIM

**61310 BUSINESS LAW****One Credit****Grade Level 11-12**

Students examine the foundations of the American legal system. They explore economic and social concepts as they relate to legal principles and to business and personal law.

**61350 BUSINESS MANAGEMENT****One Credit****Grade Level 9-12****DE6135 Grade Level 11-12****One Credit W****May dual enroll w NRCC BUS100**

Students study basic management concepts and leadership styles as they explore business ownership, planning, operations, marketing, finance, economics, communications, the global marketplace, and human relations.

**61520 KEYBOARDING APPLICATIONS****One Credit**

This course is designed for secondary school students to develop and enhance touch skills for entering alphabetic, numeric, and symbol information on a keyboard. **NOTE:** This course may be available for students who did not complete keyboarding in the middle school.

**63200 ACCOUNTING****One Credit****Grade Levels 9-12**

Students study the basic principles, concepts, and practices of the accounting cycle. Topics covered include analyzing transactions, journalizing and posting entries, preparing payroll records and financial statements, and managing cash systems. Ethics and professional conduct are emphasized.

**63210 ADVANCED ACCOUNTING****One Credit****Grade Levels 10-12**

Students will continue to gain in-depth knowledge of more advanced accounting procedures used to solve business problems and make financial decisions. A major area of concentration is in learning an Automated Accounting and QuickBooks Pro computer programs.

**66120 COMPUTER INFORMATION SYSTEMS****One Credit****Grade Levels 10-12****DE6612; Grades 11-12****One Credit W****May Dual enroll with NRCC's CSC110.**

Students apply problem-solving skills to real-life situations through word processing, spreadsheets, databases, multimedia presentations, and integrated software activities. **"Governor's STEM Academy Course"**

**66130 ADVANCED COMPUTER INFORMATION SYSTEMS****Grade Levels 11-12****One Credit**

Students apply problem-solving skills to real-life situations through advanced integrated software applications, including printed, electronic, and Web publications. **"Governor's STEM Academy Course"**

**66210 OFFICE ADMINISTRATION****One Credit**

Students enhance word processing and communication skills as they develop competencies needed by administrative support professionals. Students study office procedures such as information processing, telecommunications, electronic record management, and financial records management.

**66250 WORD PROCESSING****One Credit****Grade Levels 9-10**

Students develop intermediate to advanced level word processing skills using a variety of software functions, including graphics, desktop publishing, and telecommunications. Students gain competence integrating other applications such as database and spreadsheet into word processing activities. Classroom experiences also provide for skill development in communication.

**PA6625 WORD PROCESSING PROJECT AIM****One Credit**

Same as 66250 except the course is taught through Project AIM.

**66300 WEBDESIGN/MULTI-MEDIA TECHNOLOGIES****Grade Levels 11-12****One Credit****DE6630 may dual enroll with NRCC's ITD 110****One Credit W****Recommended Prerequisite:** Keyboarding

Students work with sophisticated software to develop web sites and multimedia presentations. The software package that will be explored in this course includes Adobe Photoshop, Dreamweaver, Flash, and Fireworks. HTML/HXTML is also introduced as a means of developing web sites. **"Governor's STEM Academy Course"**

**66310 ADV WEBDESIGN/MULTI-MEDIA TECHNOLOGIES****Prerequisite: 6630****One Credit****DE6631 may dual enroll with NRCC's ITD 112****One Credit W****Grade Levels 11-12**

Students develop skills in the use of desktop publishing software to create sophisticated printed and electronic publications. Students will work with Adobe InDesign, Photoshop and Illustrator. Software to create professional print materials and content. Students may also work with Dreamweaver, Photoshop, Fireworks, Flash and HTML to design and maintain a website. **"Governor's STEM Academy Course"**

**66400 INTRODUCTION TO INTERACTIVE PROGRAMMING****Grade Levels 11-12****One Credit**

**DE6640 may dual enroll with NRCC's ITP 160 One Credit W**  
Students explore computer concepts, use logic procedures, and implement programming procedures using one or more programming languages. **"Governor's STEM Academy Course"**

**66410 ADVANCED PROGRAMMING One Credit**  
**Grade Levels: 12 Prerequisites: 66400**  
Building on a foundation of programming skills, students will use object-oriented programming to develop applications for Windows, database, multimedia, games, mobile, and/or Web environments. Students will have the opportunity to explore and create applications related to the information technology and game design industries. The cooperative education method is available for this course. Students combine classroom instruction and supervised on-the-job training in an approved position with continuing supervision throughout the school year. **"Governor's STEM Academy Course"**

**66500 COMPUTER NETWORK SOFTWARE OPERATIONS One Credit**  
**Grade Levels 11-12 DE6650 may dual enroll with NRCC's ITN 100 One Credit W**  
This course prepares students to work effectively in today's business environment and teaches essential networking technologies and skills. **"Governor's STEM Academy Course"**

**66510 ADV.COMPUTER NETWORKSOFTWAREOPERATIONS One Credit**  
**Grade Levels 11-12**  
Advanced Computer Network Software Operations is designed to continue teaching aspects of network administration, focusing on management and support of network users and systems. **"Governor's STEM Academy Course"**

**66700 INFORMATION TECHNOLOGY (IT) FUNDAMENTALS One Credit**  
**Grade Levels 9-10**  
Information Technology (IT) Fundamentals introduces the essential technical and professional skills required for students to pursue programs leading to professional careers and IT certifications. **"Governor's STEM Academy Course"**

## AGRICULTURE

**80070 INTRODUCTION TO PLANT SYSTEMS One Credit**  
**Grade Levels: 9-10**  
Students develop competencies in each of the major areas of the Plant Systems career pathway including applied botany, plant propagation, plant care and selection. Instructional content also includes an introduction to the various divisions of the plant systems industry. Students learn agricultural mechanics applicable to plant systems. As with all agriculture courses, students will be exposed to principles of leadership and opportunities within student organizations along with Supervised Agricultural Experiences opportunities.

**80080 AGRICULTURAL MECHANICS AND BASIC ANIMAL SCIENCE One Credit**  
**Grade Levels 9-10**  
Students learn agricultural mechanics, with emphasis placed on fundamentals of electricity, arc welding, gas cutting and welding, small engines, power woodworking, and wood and metal preservatives. They also receive instruction in animal science and further competencies in rural and urban living, leadership, and resource conservation.

**80180 ADVANCED SMALL ENGINES One Credit**  
**Grade Levels 10-12**  
The Small Engine Repair II course will build upon basic skills taught in Small Engine Repair I. The student will explore and discuss in detail more advanced engine theory, including

clearances, measurements, and adjustments. The students will also learn and master the Part Smart computer program, which is the industry's standard software used to order and inventory small engine parts. **See 80820 for Small Engine Repair I.**

**80190 WELDING I One Credit**  
**Grade Level 11-12 Recommended prerequisite: 80820**  
**DE8019 may dual enroll with NRCC's WEL 100 One Credit W**  
In this course the student will be introduced to welding processes commonly known as Stick Electrode, MIG and TIG welding. Students will also weld with Flux Core and learn advanced metal cutting techniques. **"Governor's STEM Academy Course"**

**DE8095 DUAL ENROLLED WELDING II One Credit W**  
**Grade Levels 11-12 Prerequisite: 80190**  
**DE8095 dual enrolls with NRCC's WEL 123 One Credit W**  
This course is a continuation of Welding I and will further develop the student welding skills. **"Governor's STEM Academy Course"**

**80340 HORTICULTURAL SCIENCE AND PRACTICES One Credit**  
**Grade Levels 10-12**  
In this course, students develop the necessary knowledge, skills, habits, and attitudes for entry-level employment and advancement in areas such as floriculture, landscape design, greenhouse operation, and nursery plant production.

**80350 GREENHOUSE PLANT PRODUCTION & MANAGEMENT One Credit**  
**Grade Levels 11-12 Prerequisite: 80340**  
Instruction is provided in growing greenhouse crops; producing and maintaining turf grass; and operating a flower shop and garden center. The student will have the opportunity to take the certification tests for Commercial Pesticide Applicator's license and Greenhouse Grower's license.

**80360 LANDSCAPING I One Credit**  
**Grade Levels 10-12**  
Landscaping is designed as an occupational preparation course. The horticulture program assists students in developing the necessary knowledge, skills, habits, and attitudes for entry-level employment and advancement in areas such as floriculture, landscape design, greenhouse operations, nursery plant production and turf management.

**80380 FLORICULTURE One Credit**  
**Grade Levels 10-12**  
This course will help develop the necessary knowledge, skills, habits, and attitudes for entry-level positions in floriculture industries. Students will receive instruction and have hands-on activities in floral design, flower production, selling and shipping flowers, and floral shop management.

**80390 LANDSCAPING II One Credit**  
**Grade Levels 11-12 Prerequisite: 80360**  
In this course, students examine contemporary garden design from a historical perspective. Commercial and high-end residential landscape designs are developed that incorporate a wide range of specialty garden styles. Landscape projects are approached from an entrepreneurial aspect.

**80400 INTRODUCTION TO NATURAL RESOURCES One Credit**  
**Grade Levels 10-12**  
Students develop skills and knowledge to be good stewards of their natural environment. This includes knowledge of tree identification and forest measurement and management, Virginia fish and wildlife management, water conservation, soil properties, pollution control and the general preservation of natural resources.

**80410 FISHERIES AND WILDLIFE MANAGEMENT One Credit  
Grade Levels 11-12**

The Fisheries and Wildlife Management course offers instruction in identification and management of wildlife and aquatics and of their habitats. Content addressing the issues related to endangered species and organizations that protect fisheries and wildlife is also included.

**80550 FLORAL PRODUCTION AND DESIGN One Credit  
Grade Level 10-12**

Students learn design and display of floral arrangements, marketing of floral items and construction of popular arrangements used in retail floriculture. Students will learn to identify floral material and supplies commonly found in floral shops, as well as care and handling of fresh flowers.

**80800 EQUINE MANAGEMENT & PRODUCTION One Credit  
Grade Levels 9-12**

In this course students learn to care for and manage horses. Equine health, nutrition, reproduction, training, evaluation and showmanship are the major instructional areas. Course content also includes instruction in tools, equipment, and facilities for equine enterprises.

**80820 SMALL ENGINE REPAIR I One Credit  
Grade Levels 9-12**

This course offers an intensive study of the operation, maintenance, and repair of small gasoline and diesel engines. Instructional topics include principles of operation of gasoline and diesel engines, tune-up and maintenance procedures, and disassembly, overhaul, and reassembly. Instruction may also include the operation of two cycle and four-cycle engines commonly found on lawn mowers, garden tractors, snow blowers, rotary tillers, chainsaws, and other equipment. **See 80180 for Adv Small Engine Repair II.**

**80830 SMALL ANIMAL CARE One Credit  
Grade Levels 9-12**

Students will learn how to care and manage small animals, focusing on instructional areas in animal health, nutrition, management, reproduction, evaluation, training, and when applicable, showmanship. Course content also includes instruction in the tools, equipment, and facilities for small animal care and provides activities to foster business management and leadership development.

**80880 VETERINARY SCIENCE One Credit  
Grade Levels 10-12 Recommended Prerequisite: 80830**

This course covers the detailed anatomy of animals, animal first aid and CPR, medical terminology and pathology. It will also include research of the animal care industry, laboratory procedures, nutrition, and veterinary office management.

**MARKETING**

**81200 MARKETING One Credit  
Grade Levels 10-12**

**Completion of 81200 and DE8130 is required to receive dual enrolled credit for MKT 100 at NRCC.**

Students are introduced to functions and foundations involved in the marketing of goods, services, and ideas and achieve skills necessary for successful marketing employment. Students study risk management, selling, promotion, pricing, purchasing, marketing-information management, product/service planning, distribution, and financing.

**81250 DIGITAL MARKETING One Credit  
DE8125 may dual enroll w/NRCC's MKT 282 One Credit W  
Grade Levels 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 knowledge of the tools and techniques 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.

One Credit

**81300 ADVANCED MARKETING One Credit  
DE8130 Prerequisite: 81200**

**Completion of 81200 and DE8130 is required to receive dual enrolled credit for NRCC's MKT 100 One Credit W**

Students continue to gain knowledge of marketing functions and foundations as they relate to supervisory and management responsibilities and develop skills needed for advancement. They develop skills for supervisory positions and/or for continuing education in a marketing-related field.

**81350 GLOBAL MARKETING & COMMERCE One Credit\*  
Grade Levels 10-12**

**Completion of 81350 and DE8136 is required to receive dual enrolled credit for NRCC's MKT 275.**

Global Marketing and Commerce is a specialized course for students with a career interest in the field of international trade. Students gain an understanding of the various careers in global trade, finance, shipping, and marketing and consider fundamental concepts, principles, and theories of marketing in an international setting.

**81360 ADVANCED GLOBAL MARKETING & COMMERCE  
Grade Levels 11-12 One Credit**

**DE8136- Completion of 81350 and DE81360 required to receive dual enrolled cr for NRCC's MKT 275 One Credit W**

Advanced Global Marketing and Commerce, a specialized course for students with a career interest in international trade, builds upon concepts learned in Global Marketing and Commerce (8135). Economic and international trade concepts are reviewed, and the world environment of international trade is further explored.

**81400 FASHION MARKETING One Credit  
Grade Levels 10-12**

**Completion of 81400 and DE8145 is required to receive dual enrolled credit for NRCC's MKT 120.**

In this specialized course, students gain basic knowledge of the apparel and accessories industry and skills necessary for successful employment in apparel businesses. Students develop general marketing skills necessary for successful employment in fashion marketing, general marketing skills applicable to the apparel and accessories industry, and specialized skills unique to fashion marketing.

**81450 ADVANCED FASHION MARKETING One Credit  
Grade Levels 11-12**

**DE8145 Completion of 81400 and DE8145 is required to receive dual enrolled cr for NRCC's MKT 120 One Credit W**

Students with a career interest in apparel and accessories marketing gain in-depth knowledge of the apparel and accessories industry and skills important for supervisory-management employment in apparel businesses. They develop advanced skills unique to fashion marketing and advanced general marketing skills applied to the apparel and accessories industry.

**81750 SPORTS ENTERTAINMENT AND RECREATION  
MARKETING One Credit**

**Grade Levels 10-12**

**Completion of 81750 and DE8177 is required to receive dual enrolled credit for NRCC's MKT 209.**

This introductory course helps students develop a thorough understanding of fundamental marketing concepts and theories as they relate to the sports, entertainment, and recreation industries. Students will investigate the components of branding, sponsorships and endorsements, as well as promotion plans needed for sports, entertainment and recreation events.

**81770 ADVANCED SPORTS, ENTERTAINMENT AND RECREATION MARKETING** **One Credit**  
**Grade Levels 11-12**

**DE8177 Completion of 81750 and DE8177 is required to receive DE credit for NRCC's MKT 209** **One Credit W**

Students will build on prior knowledge of sports, entertainment, and recreation marketing. This course focuses on the principles of management and planning supported by research, financial, and legal concepts.

### FAMILY AND CONSUMER SCIENCES

**82190 INDEPENDENT LIVING** **One Credit**  
**Grade Levels 9-12**

Students enrolled in Independent Living focus on managing resources to achieve individual goals; making informed consumer choices; creating and maintaining a living environment that support the well-being of individuals; living in a global environment; making decisions related to nutrition, clothing, and housing; and managing a household.

**82250 FAMILY RELATIONS** **One Credit**  
**Grade Levels 9-12**

Family Relations will focus on analyzing the significance of the family, nurturing human development in the family throughout the lifespan, analyzing factors that build and maintain healthy family relationships, developing communication patterns that enhance family relationships, dealing effectively with family stressors and conflicts, managing work and family roles and responsibilities, and analyzing social forces that influence families across the lifespan.

**82290 NUTRITION AND WELLNESS** **One Credit**  
**Grade Levels 9-12**

Students enrolled in Nutrition and Wellness focus on making choices that promote wellness and good health; analyzing relationships between psychological and social needs and food choices; choosing foods that promote wellness; obtaining and storing food for self and family; preparing and serving nutritious meals and snacks; selecting and using equipment for food preparation; and identifying strategies to promote optimal nutrition and wellness of society.

**82340 INTRO TO EARLY CHILDHOOD EDUCATION** **One Credit**  
**Grade Levels 9-12** **One Credit W**  
**DE8234; Grade Levels 11-12** **One Credit W**  
**May be dual enrolled with NRCC's CHD118 and CHD120.**

The child care and education competencies focus on the principles of child growth and development; development of self-concepts and building self-esteem; learning experiences for children; principles of guiding children; healthy and safe environments; career development; and careers related to child care.

**82480 FASHION CAREERS** **One Credit**  
**Grade Levels 9-12**

The design and merchandising competencies for this course focus on identifying and exploring the individual careers within the apparel, accessory, and textile design, manufacturing, and merchandising industry.

**82500 INTRODUCTION TO CULINARY ARTS** **One Credit**

**Grade Levels 9-10**

The Introduction to Culinary Arts curriculum provides students with opportunities to explore career options and entrepreneurial opportunities within the food service industry. Students investigate food safety and sanitation, explore culinary preparation foundations, practice basic culinary skills, explore diverse cuisines and service styles, investigate nutrition and menu development, and examine the economics of food. The curriculum places a strong emphasis on science and mathematics knowledge and skills

**82550 INTRO TO INTERIOR DESIGN** **One Credit**  
**Grade Levels 10-12**

The Introduction to Design II tasks/competencies focus on identifying and exploring various careers in all areas of the interior design industry. Units of study include investigation of the physical and psychological aspects of interior environments.

**82590 INTRO TO HOSPITALITY, TOURISM & RECREATION** **One Credit**  
**Grade Levels 9-12**

Students enrolled in Introduction to Hospitality, Tourism, and Recreation focus on developing professional skills and using emerging technologies to prepare for employment in this global industry rich in diverse career opportunities.

**82750 CULINARY ARTS I** **Two Credits**  
**Grade Levels 10-11**

Students practice managerial, production, and service skills used in government, commercial, or independently owned institutional food establishments and related food industry occupations. Students plan, select, store, purchase, prepare, and serve food and food products.

**82760 CULINARY ARTS II** **Two Credits**  
**Grade Levels 11-12**

Culinary Arts II provides students an opportunity to refine skills in serving, dining room management, and other skills learned in Culinary Arts I. Students prepare for occupations such as chef/cook, baker/pastry helper, pastry decorator, hospitality worker, dietetic aide/assistant, food demonstrator, and entrepreneur.

**82790 CULINARY ARTS SPECIALIZATION** **One Credit**  
**Grade Level - 12**

The Culinary Arts Specialization curriculum provides students with continuing opportunities to obtain comprehensive knowledge of the food service industry as well as to expand their technical skills in a food service specialty. Students explore careers and refine their skills in implementing safety and sanitation standards, applying nutritional principles, planning menus, using business and math skills, and selecting and maintaining food service equipment. Depending on the options available in the locality, students specialize in one of the following four areas: Baking and Pastry Food-Preparation Techniques; Catering/Banquet Food-Preparation Techniques; Restaurant Operation Techniques; Quantity Food-Preparation Techniques. The curriculum continues to place a strong emphasis on science and mathematics knowledge and skills as it emphasizes critical thinking, practical problem solving, and entrepreneurial opportunities within the field of culinary arts.

**82850 EARLY CHILDHOOD EDUCATION I** **Two Credits**  
**Grade Levels 10-12 (280 hours)** **Two Credits**  
**DE8285 may dual enroll w NRCC's CHD 120**

**One Credit W**  
Students prepare to be primary providers of home-, family-, or institution-based child care services by focusing on the planning, organizing, and conducting of meaningful play and learning activities; child monitoring and supervision; record keeping; and referral procedures.

**82860 EARLY CHILDHOOD EDUCATION II**      **Two Credits**  
**DE8286 (CHS)**      **Two Credits**  
**DE 8286 may dual enroll with NRCC's CHD120 AND CHD 125.**  
**Grade Levels 11-12 (280 hours)**

Students focus on occupational skills needed by personnel employed in early childhood-related fields, such as education, medical/health care, social services, counseling, psychology, and entrepreneurship. Work-based learning experiences (e.g., on-site lab, local daycare centers, elementary schools, other institutions) under the supervision of the instructor are required.

**82950 INTERIOR DESIGN I**      **Two Credits**  
**Grade Levels 10-12**

Students prepare for employment in the entire spectrum of interior design by acquiring skills that include selection, purchase, design, and decoration of home furnishings and equipment; floral design; accessory construction; and textiles selection, as they prepare for continuing education leading to a career in interior design, space planning, or interior architecture.

### HEALTH AND MEDICAL SCIENCES

**83020 INTRODUCTION TO HEALTH & MEDICAL SCIENCES**  
**Grade Levels 10-12**      **One Credit**

The healthcare field is one of the fastest growing career areas with great job potential for students. This course introduces the student to the many and varied opportunities in the healthcare field.

**83310 HEALTH ASSISTING CAREERS**      **Two Credits**  
**DE8331 may be dual enrolled with NRCC's NUR 27, but does not carry weighted high school credit**  
**Grade Levels 11-12**

Health Assistant One is a course that helps prepare students to take the Virginia State Certification for Nursing Assistants, though taking the exam is not required to complete the course. Students are introduced to a wide variety of basic skills related to the health care field, including non-nursing areas.

**83320 MENTAL HEALTH ASSISTING CAREERS**  
**Grade 12**      **One Credit**

Depression, Anxiety, Suicide, Violence, Eating Disorders, Schizophrenia, Dementias, Attention Deficit Disorder, Bipolar Disorder...These are just a few of the mental health issues we will discuss in Health Assistant II. You will learn skills you can use in your day-to-day life as well: conflict resolution techniques, stress reduction skills, communication strategies, rapport building.

**83330 EMERGENCY MEDICAL TECHNICIAN I**      **One Credit**  
**DE8333 may dual enroll with NRCC's EMS 112, 113, and 120**  
**Grade 11-12**      **One Credit W**

Students focus on the role and responsibilities of emergency rescue workers, basic medical terminology, and health care skills that include first aid, cardiopulmonary resuscitation, ascetic technique, and related anatomy, physiology, and disease knowledge. Supervised work education is provided in a hospital or with rescue squads and is managed by the teacher.

**83830 MEDICAL TERMINOLOGY**      **One Credit**  
**DE8383 may be dual enrolled with NRCC's HIT 111 and 113**  
**Grade Levels 11-12**      **One Credit W**

Student will learn medical terms in an organized and systematic way. Designed to help the student learn the language of healthcare, we begin with each body system's anatomy and physiology, and process through pathology, diagnostic procedures, therapeutic interventions, and finally pharmacology (drugs).

### TECHNOLOGY EDUCATION

**84210 TECHNOLOGY OF ROBOTIC DESIGN**      **One Credit**  
**Grade Levels 9-11**

**The content of this CTE / Technology Education course is the same as the local elective course 98281. 84210 and 84250 constitute a CTE completer sequence.**

Students engage in the study of computers and microprocessors and their applications to manufacturing, transportation, and communication systems. Topics include computer equipment and operating systems, robotics, programming, control systems, and social/cultural impact of these technologies. Problem-solving activities challenge students to design, program, and interface devices with computer systems. Learning activities include robotics, computer-aided design, computer-aided manufacturing and design, and control of electromechanical devices. **"Governor's STEM Academy Course" ALSO LOCATED IN LOCAL ELECTIVE OFFERINGS**

**84250 MANUFACTURING SYSTEMS I**      **One Credit**  
**Grade Level 9-12**

**84210 and 84250 constitute a CTE completer sequence.**

This course provides an orientation to careers in various fields of manufacturing. Emphasis will be placed on manufacturing systems, safety, materials, production, business concepts, and the manufacturing process. Students participate in individual and team activities to create products that demonstrate critical elements of manufacturing. **"Governor's STEM Academy Course"**

**84270 MANUFACTURING SYSTEMS II**      **One Credit**  
**Grade Level 11-12**

Students develop an in depth understanding of automation and its applications in manufacturing. Activities center on flexible manufacturing processes and computer integrated manufacturing (CIM). Students work in teams to solve complex interdisciplinary problems that stem from the major systems in automated manufacturing. **"Governor's STEM Academy Course"**

**84300 CIVIL ENGINEERING & ARCHITECTURE**      **One Credit**  
**DE8430 may dual enroll with NRCC's DRF 201 or Rochester Institute of Technology**      **One Credit W**  
**Grade Levels 11-12 (PLTW)**

In this specialization course for Project Lead the Way (PLTW) students collaborate on both the development of community-based building and design projects and conceptual design for project presentations. **"Governor's STEM Academy Course"**

**84310 CONSTRUCTION TECHNOLOGY**      **One Credit**  
**Grade Levels 9-10**

Students design, build and test scale model structures. They also work with projects that help them understand the jobs of architects, carpenters, electricians, plumbers, surveyors, contractors, masons, and design engineers, as well as explore a variety of other construction career. **"Governor's STEM Academy Course"**

**84330 MATERIALS AND PROCESSES TECHNOLOGY**  
**Grade Levels 9-10**      **One Credit**

Students focus on industrial/technical materials and processes as they fabricate usable products and conduct experiments. Learning experiences include career analysis as well as the use of tools and equipment related to analysis, testing, and processing of metals, plastics, woods, ceramics, and composite materials. This single-period laboratory course is recommended for students interested in technical careers and others wishing to improve their consumer knowledge and technological literacy. **"Governor's STEM Academy Course"**

**84350 TECHNICAL DRAWING AND DESIGN** **One Credit**  
**DE8435 may dual enroll with NRCC** **One Credit W**  
**Grade Levels 9-12**

Basic Technical drawing is an introductory drafting course that provides students the opportunity to develop the skills of the graphic language of technical design and illustration used in the industries of engineering, architecture, drafting and design. Includes Intro to Engineering Curriculum 84390 **"Governor's STEM Academy Course"**

**84360 ENGINEERING DRAWING AND DESIGN** **One Credit**  
**Grade Levels 10-12**

**DE8436 may dual enroll with NRCC's CAD 114** **One Credit W**  
 In Engineering Drawing & Design, students will learn various computer aided drafting and design (CADD) software applications to prepare graphic illustrations for practical solutions to various design problems. **"Governor's STEM Academy Course"**

**84370 ARCHITECTURAL DRAWING AND DESIGN** **One Credit**  
**Grade Levels 10-12**

**DE8437 may dual enroll with NRCC's CAD 201** **One Credit W**  
 In Architectural Drawing & Design, students will be introduced to the principles of architectural design and drafting, including conceptual building and space planning, detailed working drawings, construction techniques and specifications of materials. Includes Architecture and Civil Engineering curriculum 84300 **"Governor's STEM Academy Course"**

**84380 ADVANCED DRAWING AND DESIGN** **One Credit**  
**Grade Levels 11-12**

**DE8438 may be Dual Enrolled with NRCC's CAD 191 to receive 3 college credits** **One Credit W**  
 In Advanced Engineering Drawing & Design, students will increase their understanding of drawing and design techniques learned in the prerequisite courses. Students will research design-related fields while identifying the role of advanced design processes in industries such as manufacturing and construction. **"Governor's STEM Academy Course"**

**84390 INTRODUCTION TO ENGINEERING DESIGN (Technology)**

**Grade Levels 9-12 (PLTW)** **One Credit**  
**DE8439 may dual enroll w/ Rochester Institute of Technology** **One Credit W**

Students will learn "The Universal Language" of Industry. They learn to draw using the basic concepts of engineering drawing, such as line weights, measurements, geometric constructions, and orthographic projection. Drawings are initially made using standard board drafting equipment. Students will also learn to use a parametric 3D modeling program to create solid models of various project. Students will use computer software to produce, analyze and evaluate models of project solutions. **"Governor's STEM Academy Course"**

**84410 PRINCIPLES OF ENGINEERING** **One Credit**  
**Grade Levels 10-12 (PLTW)**

**DE8441 may dual enroll w/ Rochester Institute of Technology** **One Credit W**

This course provides an overview of engineering and engineering technology. Students develop problem-solving skills by tackling real-world engineering problems. Through theory and practical hands-on experiences, students address the emerging social and political consequences of technological change. **"Governor's STEM Academy Course"**

**84420 COMPUTER INTEGRATED MANUFACTURING**

**Grade Levels 10-12 (PLTW)** **One Credit**  
**DE8442 may dual enroll w/ Rochester Institute of Technology** **One Credit W**

This course teaches the fundamentals of computerized manufacturing technology. It builds on the solid-modeling skills developed in introduction to engineering design. Students use 3-D computer software to solve design problems. **"Governor's STEM Academy Course"**

**84450 POWER AND TRANSPORTATION** **One Credit**  
**Grade Levels 9-11 36 week course**

Students survey the many broad sources of energy and power used in power and transportation systems. Instruction includes: (1) how energy is converted to power; (2) how power is transmitted and controlled; and (3) how power is used through mechanical, fluid, and electrical devices.

**98110 PRINCIPLES OF TECHNOLOGY / APPLIED PHYSICS I** **One Credit (CTE)**  
**Recommended Grade Level 10-12**

**98110 and 98120 constitute a CTE completer sequence.**  
 Students in this single-period laboratory science course apply physics and mathematics concepts through a unified systems approach to develop a broad knowledge of the principles of underlying modern technical systems. Students study seven technical principles and how each plays an underlying role in the operation of mechanical, fluid, electrical, and thermal systems in technical equipment. **"Governor's STEM Academy Course"**

NOTE: Students who complete Principles of Technology I and II may use these courses to satisfy one Physics credit and one CTE elective credit. This course may be taught by a Technology Education or Physics teacher.

**98120 PRINCIPLES OF TECHNOLOGY / APPLIED PHYSICS II** **One Science Credit**  
**Recommended Grade Levels 11-12**

**98110 and 98120 constitute a CTE completer sequence.**  
 This course focuses on seven additional technical principles that relate to the operation of mechanical, fluid, electrical and thermal systems. **"Governor's STEM Academy Course"**

NOTE: Students who complete Principles of Technology I and II may use these courses to satisfy one Physics credit and one CTE elective credit. This course may be taught by a Technology Education or Physics teacher.

**98281 ROBOTICS EXPERIENCE I** **One Local Elective Credit**  
**84210 TECHNOLOGY OF ROBOTIC DESIGN can substitute for this course in the local elective sequence.**

Students engage in the study of computers and microprocessors and their applications to manufacturing, transportation, and communication systems. Topics include computer equipment and operating systems, robotics, programming, control systems, and social/cultural impact of these technologies. Problem-solving activities challenge students to design, program, and interface devices with computer systems. Learning activities include robotics, computer-aided design, computer-aided manufacturing and design, and control of electromechanical devices. **"Governor's STEM Academy Course"**.

**98282 ROBOTICS EXPERIENCE II** **One Local Elective Credit**  
**Prerequisite: 98281, 84330 OR 84250.**

Robotics class is open to students of every Montgomery County high school. Because of this wide availability, the class meets during evening hours. Transportation to participate in this course is the responsibility of the student. While offered as the equivalent of a one-semester block class, class meetings occur throughout the year. Through the fall and up to winter break, the class meets Monday and Wednesday evenings.

An intensive design and development period occurs in preparation for an international contest, during which the class meets every weekday evening. This will run from early-January through late-February. In order to reduce the impact on performance in other classes, no mid-term or final examinations are conducted in this course. The balance of class meetings necessary to satisfy contact hour standards will be conducted

over the portion of the school year remaining after the team attends the national competition. In this class students are taught a structured design process and selected technical skills such as the use of CAD software, computer logic, and tool use. Mentors from industry and local universities coach students and support their skill development. The skills and knowledge developed are applied to production of a robot and other items, for entry in the FIRST Robotics competition. **"Governor's STEM Academy Course"**

**98283 ROBOTICS EXPERIENCE III One Local Elective Credit**  
**Prerequisite: 98282** Continuation of 98282. "Governor's STEM Academy Course"

**TRADE AND INDUSTRIAL**

**85030 HEATING, VENTILATION, AND AIR CONDITIONING (HVACR) I One Credit**

**Grade Levels 10-11**  
**DE8503 may dual enroll with NRCC's AIR 121 and AIR 122 (7 college credits).**

In this series of courses, you will learn how to design, build and install all of the components necessary to heat and cool a house. In addition, students learn how to diagnose and repair refrigerators, air conditioners, heat pumps and furnaces. This class is great for anyone who wants to work in a hands-on field or for anyone who just wants to know how to do repairs on their own equipment.

**85040 HVACR II Two Credits**  
**Grade Levels 11-12**

In this series of courses, you will learn how to design, build and install all of the components necessary to heat and cool a house. In addition, students learn how to diagnose and repair refrigerators, air conditioners, heat pumps and furnaces. This class is great for anyone who wants to work in a hands-on field or for anyone who just wants to know how to do repairs on their own equipment.

**85060 AUTO TECH I Two Credits**  
**Grade Levels 10-11**

Auto Technology is a two-year Career and Technical Education Program for students who are beginning their junior year and plan to complete the program as seniors. The purpose of the program is to prepare students with entry level skills in the automotive field or provide them with the background to continue developing more diagnostic skills as a post-secondary school. Students are expected to develop knowledge of automobile components and how systems perform in order to understand the what, how, and why of automotive operations. As students gain knowledge, they are able to practice and demonstrate their knowledge and skills in the auto lab/shop on mock jobs or customer cars.

**85070 AUTO TECH II Two Credits**  
 Continuation of 85060

**85080 AUTO TECH III Two Credits**  
**Grade 12** Continuation of 85070

**85150 BUILDING TRADES I One Credit**  
**Grade Levels 10-11**

Building Trades I prepares students to erect, install, maintain, and repair building, and other structures using materials such as metal, wood, stone, brick, glass, concrete and composition substances. Students focus on developing skills in core safety in the masonry, carpentry, electricity, and plumbing professions.

**85160 BUILDING TRADES II One Credit**  
**Grade Levels 11-12**

Building Trades II continues to prepare students to erect, install, maintain, and repair building, and other structures using materials such as metal, wood, stone, brick, glass, concrete and composition substances. Students focus on developing skills in core safety in the masonry, carpentry, electricity, and plumbing professions. **NOTE:** Co-operative education is available.



~~The cosmetology program consists of four courses and six credits. All six credits should be completed to sit for the Virginia State Licensing Exam: 8540, COSME, 85217, and 85280. The introductory course, Beauty Salon Assistant and Cosmetology Experience should be scheduled together~~

Effective July 1, 2016, the minimum number of instructional hours for the Barbering I, II, III (8740, 8741, 8742) program and Cosmetology I, II, III (8527, 8528, 8529) program will be 840 hours. Therefore, students who enroll for the first time in Barbering I or Cosmetology I on or after July 1, 2016, will be required to satisfy the three-year 840-hour minimum program completion requirement. Upon satisfactory completion of the three-year 840-hour program, these students will be eligible to take the Board for Barbers and Cosmetology licensing examination.

**85460 BEAUTY SALON ASSISTANT (140 hours) One Credit**  
**Suggested Grade Levels 10-11**

The Beauty Salon Assistant course prepares students for work as an assistant in a hair salon. Students study and prepare in a clinical lab setting, learning practical and manipulative skills. The program emphasizes safety and sanitation, shampooing and conditioning, retailing, inventory control, and receptionist work. Competency completions allow students a certificate for entry-level employment. This course may not constitute part of a VDOE approved completer sequence for graduation. This course is a required pre-requisite at BHS.

~~COSME-COSMETOLOGY-EXPERIENCE (140 hours) One Credit~~  
~~Grade Level 10-11~~

~~This course will be scheduled with 85460 to provide salon time for meeting state licensure requirements.~~

**85270 COSMETOLOGY I Two Credits**  
**Grade Levels 11-12 10-11 (280 Hours)**

**Prerequisites: 85460 and COSME-None**  
**SEE 85460 FOR INTRO COURSE NOTE: May dual enroll with NRCC's COS 81; Approval pending.**

In this course, students study hair, skin, and nails and their related care. Students are grounded in theory as they prepare to practice procedures in a clinical lab setting or classroom, using manikins for manipulative skill practice. The first-year course emphasizes personal safety, professionalism, and sanitation and disinfection of equipment and facilities. Students develop skills in shampooing and conditioning hair, as well as styling and cutting hair. They are introduced to chemical texture services and develop skills in manicure and pedicure procedures.

**85280 COSMETOLOGY II Two Credits**  
**Grade Levels 11-12 (280 Hours)**

**Prerequisite: 85270**

**NOTE: May dual enroll with NRCC's COS 82; Approval pending** In this advanced course, students build on their theoretical foundation of general sciences and practices in cosmetology to increase proficiency in hair cutting and styling on live models, with attention to professionalism, client consultation, safety, and infection control. Students are trained in safe chemical processes related to permanent waves, relaxers, soft-curl permanent waves, lightening, and coloring hair. They also develop artistic skills with wigs and hair additions. In addition,

students learn to care for skin, hands, and feet, developing experience in providing facials, manicures, pedicures, and nail enhancements. A business management unit focuses on managing the salon. ~~Competency completion prepares the student for the Virginia State Licensing Exam.~~ Students can combine classroom instruction and supervised on-the-job training in an approved position or internship with continuing supervision throughout the school year.

**85290 COSMETOLOGY III** **Two Credits**  
**Grade Levels 11-12 (280 Hours)**  
**Prerequisite: 85280**

In this advanced course, students build on their theoretical foundation of general sciences and practices in cosmetology to increase proficiency in hair cutting and styling on live models, with attention to professionalism, client consultation, safety, and infection control. Students are trained in safe chemical processes related to chemical texture services and advanced hair coloring techniques. They also develop artistic skills with wigs and hair additions. In addition, students learn to care for skin, hands, and feet, developing experience in providing facials, manicures, pedicures, and nail enhancements. An advanced business management unit focuses on managing the salon. Competency completion prepares the student for the Virginia State Licensing Exam. Students can combine classroom instruction and supervised on-the-job training in an approved position or internship with continuing supervision throughout the school year. Competency completion in 85270, 85280, and 85290 are required preparation for the student for the Virginia State Licensing Exam.

**87400 BARBERING I** **Two Credits**  
**Grade Levels 10-11 (280 Hours)**  
**Prerequisite: None**

Barbering is the study of hair, scalp, and skin. Students study and prepare in a clinical lab setting, using mannequins and live models for manipulative practice. The program emphasizes safety and sanitation, communication, and management skills. Related areas of study include psychology, ethics, and professional image. Competency completions prepare the students to work or apprentice in a local barber shop or beauty salon.

**87410 BARBERING II** **Two Credits**  
**Grade Levels 11-12 (280 Hours)**  
**Prerequisite: 87400**

Students apply their knowledge of barbering skills in a clinical lab setting, using mannequins and live models for manipulative practice. The program emphasizes safety and sanitation, communication skills, and management of a barber shop or beauty salon. Related areas of study include psychology, ethics, and professional image. Competency completions prepare the students for the Virginia state licensing exam.

**87420 BARBERING III** **Two Credits**  
**Grade Levels 12 (280 Hours)**  
**Prerequisite: 87410**

In this advanced course, students build on their theoretical foundation of general sciences and practices in barbering to increase proficiency in hair cutting and styling on live models, with attention to professionalism, client consultation, safety, and infection control. Students are trained in safe chemical processes related to chemical texture services and advanced hair coloring techniques. They also develop artistic skills with wigs and hair additions. An advanced business management unit focuses on managing the shop. Competency completion prepares the student for the Virginia State Licensing Exam. Students can combine classroom instruction and supervised on-the-job training in an approved position or internship with continuing supervision throughout the school year.

**85300 INTRODUCTION TO ENGINEERING DESIGN (Drafting)** **One Credit**  
**Grade Levels 10-11**  
**DE8530 may dual enroll with RIT** **One Credit W**

Students will learn The Universal Language of Industry. They learn to draw using the basic concepts of engineering drawing, such as line weights, measurements, geometric constructions, and orthographic projection. Drawings are initially made using standard board drafting equipment. Students will also learn to use a parametric 3D modeling program to create solid models of various project. Students will use computer software to produce, analyze and evaluate models of project solutions. **"Governor's STEM Academy Course"**

**85310 ENGINEERING DESIGN GRAPHICS** **Two Credits**  
**DE8531 may dual enroll with NRCC's CAD114** **Two Credits W**  
**Grade Levels 11-12**

Engineering Design Graphics is an in-depth study of mechanical design graphics using the industry standard AutoCAD Software. **"Governor's STEM Academy Course"**

**85320 CIVIL ENGINEERING AND ARCHITECTURAL DESIGN GRAPHICS** **Two Credits**  
**DE8532 may dual enroll with NRCC's CAD 201** **Two Credits W**  
**Grade Levels 11-12**

The major focus of the Civil Engineering and Architecture (CEA) Design Graphics course is a long-term project that involves the design of a residential home. As students learn about various aspects of Civil Engineering and Architecture, they apply what they learn to the design and development of this home. **"Governor's STEM Academy Course"**

**85330 ELECTRICITY I** **One Credit**  
**Grade Levels 10-11**

Students will learn about electricity and the wiring methods used in residential, commercial and industrial applications, with a special emphasis on the electrical aspects of heating ventilation and air conditioning (HVAC) systems. Students will learn how to safely use electrical test meters to diagnose and repair problems in electrical distribution circuits and equipment control circuitry. **DE8533 may dual enroll with NRCC's ELE 130, ELE 127 and SAF 127 (8 college credits).**

**85340 ELECTRICITY II** **Two Credits**  
**Grade Levels 11-12**  
 Same as 85330.

**85350 ELECTRICITY III** **Two Credits**  
**Grade Level 12**  
 Same as 85330.

**85390 PRECISION MACHINING TECHNOLOGY I** **Two Credits**  
**Grade Levels 10-11**

Completion of 85390 and DE8540 required to receive dual enrolled credit for NRCC's MAC 106. The student learns basic skills used in machine shop operations. This includes machine shop practices and operation of an engine lathe, milling machines, drill press surface grinders as well as sawing operations. **"Governor's STEM Academy Course"**

**85400 PRECISION MACHINING TECHNOLOGY II** **Two Credits**  
**DE8540 may dual enroll w/NRCC's MAC 106 for nine college credits; Prerequisite: 85390** **Two Credits W**  
**Grade Levels 11-12**

See 85390 description. In Machine Tech II and III students learn about the manufacturing processes and are introduced to computer numerical control (CNC), milling machines and lathes. They study the strength of materials and metallurgy and can

design their own projects from a blueprint to the finished product.  
**"Governor's STEM Academy Course"**

**85700 ADVERTISING DESIGN I** **One Credit**  
**Grade Levels 10-11**

Advertising Design students will learn the basics of graphic design and the advertising industry. Ad Design explores the elements and principles of design in a project-based environment. The students will use creativity and project planning skills as they develop a professional portfolio.

**85710 ADVERTISING DESIGN II** **Two Credits**  
**Grade Levels 11-12**

Continuation of Advertising Design I.

**86010 CARPENTRY I** **One Credit**  
**Grade Levels 10-11**

In this program students lay out, fabricate, erect, install, and repair wooden structures and fixtures, using hand and power tools. Instruction in common systems of framing, construction materials, estimating, and blueprint reading is included.  
**"Governor's STEM Academy Course"**

**86020 CARPENTRY II** **Two Credits**  
**Grade Levels 11-12**

Continuation of 86010.

**"Governor's STEM Academy Course"**

**86030 CARPENTRY III** **Two Credits**  
**Grade Level 12**

Continuation of 86020.

**"Governor's STEM Academy Course"**

**86040 CABINET MAKING I** **One Credit**  
**Grade Levels 10-11**

Students learn workshop and tool safety and employability skills as they practice reading blueprints; estimating and selecting materials; cutting and shaping stock; assembling, fastening, and installing components; and finishing surfaces. The technical, problem solving, leadership, and creative skills learned in Cabinetmaking can be applied in industries well beyond construction trades and professions and can prepare the student for lifelong learning and success. **"Governor's STEM Academy Course"**

**86051 CABINET MAKING II** **Two Credits**  
**Grade Levels 11-12 (280 hours)**

See Cabinet Making I - 86040. Second year emphasis – Extension of first year to more complicated projects in cabinetmaking, furniture and carpentry. **"Governor's STEM Academy Course"**

**86071 CINEMA & PHOTOGRAPHIC PRODUCTION I** **One Credit**  
**Grade Levels 9-12**

Cinema and Photographic Production simulates a real world movie production, photographic, and editing facility. Basics of photography, including exposure, lighting and composition will be taught and applied to both still photography and videography.

**86080 CINEMA & PHOTOGRAPHIC PRODUCTION II** **Two Credits**  
**Grade Levels 11-12**

Continuation of Cinema and Photographic Production I - 86070.

**86220 COMPUTER SYSTEMS TECHNOLOGY I** **One Credit**  
**Grade Levels 10-11 (140 hours)**

**DE8622 – Grade Levels 11-12 and may be dual enrolled with NRCC's ITN 261** **One Credit W**

Students learn to construct, troubleshoot, service, and repair computer systems, related components, and software, and to install and maintain local area networks. This course is for students planning to enter a technical position or computer technician or administrator but is valuable for anyone who uses a computer in a professional capacity. Emphasis will be placed on internet and computer security. **"Governor's STEM Academy Course"**

**86230 COMPUTER SYSTEMS TECHNOLOGY II** **Two Credits**  
**DE8623 may dual enroll w/NRCC's ITN 260 or Radford University's ITEC 145** **Two Credits W**

**Grade Levels 11-12 (280 hours)**

The main goal of this course is to provide students with a comprehensive understanding of the multiple pc operating systems commonly found in the IT field today. Students will learn the theory behind operating systems and some basic components of each operating system. Emphasis will be placed on internet and computer security. **"Governor's STEM Academy Course"**

**86600 GRAPHICS IMAGING TECHNOLOGY I** **One Credit**  
**Grade Levels 9-11**

Graphic Design students will learn the basics of graphic design while learning about the graphic industry for print and internet. Graphic Design explores the elements and principles of design in a project-based environment.

**86610 GRAPHIC IMAGING TECHNOLOGY II** **Two Credits**  
**Grade Levels 11-12 (280 hours)**

Continuation of Graphic Imaging Technology I - 86600.

**CAREER CONNECTIONS**

**INTERN INTERNSHIP WORKFOCUS** **One Credit**  
**Grade Levels 11-12**

Internship is a planned, progressive, structured educational activity or program that enables the student to practice and develop career-related skills in a real workplace environment. It provides hands-on experience in a particular industry or occupation related to the student's career interests, abilities, and goals, and allows him or her to document job-related experiences. Prior to the internship, the student receives the established criteria and guidelines from the worksite supervisor. Throughout the internship, the supervisor evaluates the student. Internships are scheduled for a specified period of time during the school year and/or during the summer and may be paid or unpaid. NOTE: MCPS requires that student Internships adhere to the same standards and regulations that apply to Co-operative Experience placements, with the exception that student internship can be unpaid. Internships will be supervised by teachers who have received DOE Co-op training.

**90620 VIRGINIA TEACHERS FOR TOMORROW TEACHER CADET** **One Credit**

**DE9062 This course may dual enroll with EDU 198 at NRCC**  
**Grade Level 12**

This course introduces seniors to a career in teaching and education. The primary elements of the curriculum components are the learner, the school, and the teacher and teaching. The components are intentionally broad in scope and provide a great deal of flexibility based on the career interest of a student.

**90710 CAREER EXPLORATION (CONSTRUCTION AND MANUFACTURING)** **One Credit**  
**Grade Levels 9-10**

This introductory level course will cover the National Center for Construction Education and Research core curriculum. This curriculum is essential for students who will pursue automotive mechanics, carpentry, cabinetmaking, small engine repair, welding, or precision machining.

**90711 CAREER EXPLORATION (BUSINESS, MARKETING AND INFORMATION TECHNOLOGY) One Credit  
Grade Levels 9-10**

This course consists of an in-depth study of three career clusters through a variety of investigative activities. Students will be exposed to the basic skills in each area and will observe, analyze, and report on the demand for workers, worker qualifications, organizational structures, quality control measures, selected policies and regulations, ethical issues, and rewards of work.

**90780 INTRODUCTION TO EDUCATION FOR EMPLOYMENT One Credit**

This course introduces students to the concept of work and the process of making informal career and continuing education choices. These choices are required to successfully transition to the workplace. Students are taught ethical behaviors and career-research, job-acquisition, workplace-communication, self-awareness, self-advocacy, customer-service, and life-skills. This course is designed for students needing workplace readiness skills before entering community-based instruction and/or additional courses within career clusters.

**90850 EDUCATION FOR EMPLOYMENT One Credit  
Grade Levels 9-11**

This course teaches students to make informed career and continuing education choices as they transition from school, gain technical skills, and adapt to the workplace. Students are taught ethical behaviors and career-research, job-acquisition, workplace-communication, self-awareness, self-advocacy, customer-service, and life skills.

**90930 ENTREPRENEURSHIP EDUCATION One Credit  
Grade Level 9-12**

This course introduces students to the exciting world of creating, owning, and launching their own business. Students will learn concepts and techniques for planning an innovative business and living the entrepreneurial lifestyle

**DE9840 DE COLLEGE SUCCESS SKILLS No Credit\*  
Grade Levels 11-12 College Credit Only**

This course assists students in transition to colleges and provides overviews of college policies, procedures, and curricular offerings. It encourages contacts with other students and staff and assists students toward college success through information regarding effective study habits, career and academic planning and other college resources available to students.

**PLEASE NOTE: Any of the Cooperative Education Work Experience Courses - BUSCO, AGRCO, MKTCO, FCSCO, HOCCO, TAICO, and TEDCO – may only be scheduled when paired with the appropriate subject area CTE Offering.**

**Duration: 36 weeks, minimum of 396 hours on the job**

**Suggested Grade Levels: 11 or 12**

**Prerequisites: None Credits Earned: One**

Cooperative Education work experience combines career and technical classroom instruction with paid employment directly related to the classroom instruction. Cooperative Education work experience is available through most high school CTE courses. Courses using the cooperative education method integrate classroom instruction with supervised on-the-job training and the related career and technical student organization. Instruction is developed and conducted in consultation with employers having skills and considerable knowledge of the occupational field represented by the student's career objective. Individualized,

written training plans are developed to correlate the classroom instructions with the on-the-job training. Formal and informal evaluations of student progress including feedback are completed to assist learners in improving their work performance. Cooperative Education experiences must be supervised by a CTE teacher who has completed the required Cooperative Education teacher training provided by the VDOE.

**Original Posting Date: November 2015**