



Lynchburg City Schools High School Program of Studies 2011 – 2012

*The Lynchburg City Schools,
with its Tradition of Excellence,
recognizes the uniqueness and
worth of all students
and will teach each student
the concepts, knowledge, and skills
necessary to be a thinking,
productive, and responsible citizen.*

Lynchburg City School
Mission Statement
Adopted June 2, 1998

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GENERAL INFORMATION

INTRODUCTION

The following pages contain the school division's graduation requirements and a listing of all courses in the high school curriculum. This listing contains course titles, course numbers, grade(s) in which students may select a particular course, the semester(s) each course will be taught, course credit value, prerequisites, and a brief description of each course. Except for several career-technical courses, the same courses are available in both schools. Whether or not a particular course is actually taught, however, depends upon the number of students enrolling in that course. All students who have successfully completed high school courses in middle school receive credit toward graduation as well as credit toward satisfying particular subject area requirements. The courses falling into this category in Lynchburg City Schools are advanced and regular Algebra I, advanced earth science, and the foreign languages. These courses, as well as any other traditional high school courses that may be taken for credit in middle school, are included in a student's high school Grade Point Average (GPA).

GIFTED EDUCATION

The high school program for gifted education is designed to serve those students who are gifted in the area of specific academic aptitude. The program is provided through course offerings listed in the program of studies under the heading of Advanced and Advanced Placement Courses. These courses offer students an opportunity to accelerate their program as well as provide an enriched and in-depth classroom experience. Any interested student may enroll in one or more of these courses as long as he or she has successfully completed any prerequisites. The Lynchburg City Schools also participates in the regional Central Virginia Governor's School (CVGS) for Science and Technology and the state-sponsored Summer Governor's School programs. These programs provide unique opportunities for gifted students to pursue special areas of interest. Students and their parents are encouraged to contact their guidance counselor to learn more about these programs and the opportunities they provide. Course offerings for CVGS are included in another section of this program of studies.

DUAL ENROLLMENT COURSES

The dual enrollment program with Central Virginia Community College allows students who are enrolled in certain high school courses to receive both high school and college credit. Student interest defines which courses will be taught on a yearly basis. Students enrolled in these courses may earn college credit from CVCC by fulfilling course requirements and completing the course with a grade of C or better. Students must qualify for enrollment for these courses by taking the CVCC placement test or by ACT or SAT qualifying scores. The costs for required textbooks for dual enrollment courses will remain the responsibility of the school division. Optional supplemental resources will remain the responsibility of the student and his or her family with the exception of those students receiving public assistance. Students who are not from economically disadvantaged families (with economically disadvantaged being defined as on the current list of students eligible for free or reduced price lunch) will pay fifty percent tuition and fees charged by CVCC for dual-enrollment courses. These fees will be collected from the students at the beginning of each semester, and those students who do not pay the fees by the CVCC payment deadline will not earn college credit for those courses. Students who are on the current free and reduced price lunch list will be charged twenty-five percent of the full tuition and fees charged by CVCC for dual-enrollment courses. These fees will be collected from students at the beginning of each semester, and those students who do not pay the fees by the CVCC payment deadline will not earn college credit for those courses. For more information, please contact the appropriate guidance counselor.

SPECIAL EDUCATION

Special education programs and services are available to students with disabilities. The special education services are provided based on an individualized education plan which is developed by a student's parent(s) and a school-based instructional team. When a parent, teacher, or guidance counselor suspects a student is disabled, a referral is processed through the building principal to the school-based child study committee. Upon receipt of a referral, the child study committee meets within 10 working days. If the child study committee suspects the child may have a disability, a comprehensive evaluation is completed after securing parent written permission to evaluate. Placement in a special education program or class is contingent on the results of extensive diagnostic testing and assessment as well as the decision of a school-based eligibility committee's review of the assessment results and the eligibility criteria set forth in the Regulations Governing Special Education Programs in Virginia.

Students with disabilities shall be eligible to receive a Standard Diploma, Advanced Studies Diploma or Advanced Studies Diploma with Lynchburg Honors Seal upon earning the units of credit prescribed and by passing the Standards of Learning Tests. In addition, in 2000, the Virginia Board of Education approved the Modified Standard Diploma as a diploma available to students with disabilities who graduate in 2004 and beyond. The Special Diploma is also an option for students with disabilities. Requirements for these diplomas are described in a later section of this program of studies.

ALTERNATIVE AND ADULT EDUCATION PROGRAM INFORMATION

Lynchburg City Schools offers a variety of alternative programs available to students on an individual basis. These programs include the Fort Hill Community School which also houses the homebound program, the Amelia Pride Center, RODEO (Reach Out to Develop Educational Opportunities) and other pre-General Educational Development (GED) certificate programs.

- Students in an alternative program completing requirements for a diploma will only be eligible to participate in the Pride Center graduation.

GRADUATION REQUIREMENTS

The *Regulations for Establishing Standards for Accrediting Public Schools in Virginia* specifies the standards that all students must meet in order to earn the Special Diploma, the Modified Standard Diploma, the Standard Diploma, and the Advanced Studies Diploma. These standards can be changed from one year to another, and each student must meet the requirements in place the year he or she first entered the ninth grade. There are additional local requirements to earn the Advanced Studies Diploma with a Lynchburg Honors Seal.

VERIFIED CREDITS

To receive a standard diploma, students must pass six Standards of Learning (SOL) tests. Students entering ninth grade after 2003-04 must pass English: Reading/Literature/Research, English: Writing, one math, one science, one history/social studies, and one other SOL test or substitute test. All students seeking an advanced studies diploma must pass nine Standards of Learning (SOL) tests including the 2 English, 2 math, 2 science, 2 history, and one other.

LOCALLY AWARDED VERIFIED CREDIT OPTION

The current *Regulations for Establishing Standards for Accrediting Public Schools in Virginia* provide for locally awarded verified credits in science and history/social studies for students in the ninth grade class of 2003-2004 and beyond who are working toward a standard diploma (8 VAC 20-131-110 B.3).

A verified credit is received when a student passes a high school credit course and the associated Standards of Learning (SOL) end-of-course state test. A locally awarded verified credit is an option available for some students who pass a science or history/social studies class but do not pass the associated SOL end-of-course test and do not have enough verified credits to graduate with a standard diploma. Locally awarded verified credits apply only to the standard diploma. No locally awarded verified credit may be used for the advanced studies diploma. Locally awarded verified credits apply only to science and history/social studies. No locally awarded verified credits are available for math, reading, or writing.

To be eligible to earn a local verified credit in science or history/social studies, a student must:

- pass the high school course but not pass the associated state SOL end-of-course test,
- score at least 375 on any administration of the SOL test having taken the test at least twice,
- be working toward a standard diploma, and
- demonstrate achievement in the academic content through a local appeal process.

The appeal process in Lynchburg includes the following:

- A local review panel comprised of at least three educators will be appointed for each high school. The assistant superintendent of curriculum and instruction will chair each panel and will select the other two members of each panel. These additional members will be selected from central office staff, building level administrators, or department chairs or content teachers in science or social studies.
- The panel will review semester grades of students eligible for a local verified credit. A local verified credit will be awarded if a student has achieved a final grade of "C" or better for both semesters of the science or history course.
- Students eligible for a local verified credit who receive a "D" for one or both semesters of the science or history course will receive a local verified credit if they receive a grade of "C" or higher on the exam for the semester or semesters in which they made a "D."
- Students not meeting one of the above criteria may review course content and take a retest of the course exam and receive a verified credit if they obtain a "C" or higher grade on the retake. This option is only available one time.
- Students not meeting any of the above criteria may request a series of additional academic assignments that, when completed satisfactorily, will lead to a local verified credit.
- The local review panel has final authority in determining whether to (a) award the verified credit, (b) deny the verified credit, (c) suggest participation in a remedial program and retesting, or (d) make additional academic assignments as deemed appropriate prior to determining whether to award the verified credit.

GRADUATION REQUIREMENTS (continued)

The requirements for a student to earn a diploma and graduate from a Virginia high school shall be those in effect when that student enters the ninth grade for the first time. Students shall be awarded a diploma upon graduation from a Virginia high school. The following requirements are in effect for students entering the ninth grade for the first time prior to the fall of 2011.

STANDARD DIPLOMA (Entering 9th grade prior to 2011)

Discipline Area	Standard Units of Credit Required (Year Courses)	Verified Units of Credit Required (SOL tests passed with courses)
English	4	2
Math ¹	3	1
Science ^{2, 6}	3	1
Social Studies ^{3, 6}	3	1
Health and P.E.	2	
Fine Arts or Career and Technical Education	1	
Electives ⁴	6	
Student Selected Tests ⁵		1
Total	22	6

Students in the graduating classes of 2007 and beyond must pass 6 of 12 Standards of Learning (SOL) end-of-course tests as indicated in the chart. Courses designed specifically to meet the requirements of the Modified Standard Diploma shall not be counted toward the requirements for the Standard Diploma.

¹ Courses completed to satisfy this requirement shall be at or above the level of algebra and shall include at least two course selections from among: Algebra I, geometry, Algebra II, or other mathematics courses above the level of algebra and geometry.

² Courses completed to satisfy this requirement shall include course selections from at least two different science disciplines: earth sciences, biology, chemistry, or physics.

³ Courses completed to satisfy this requirement shall include U.S. and Virginia History, U.S. and Virginia Government, and one course in either world history or geography or both.

⁴ Courses to satisfy this requirement shall include at least two sequential electives as required by the Standards of Quality.

⁵ A student may utilize additional tests for earning verified credit in computer science, technology, career and technical education or other areas as prescribed by the board in 8 VAC 20-131-110.

⁶ Students who complete a career and technical education program sequence and pass an examination or occupational competency assessment in a career and technical education field that confers certification or an occupational competency credential from a recognized industry, or trade or professional association or acquires a professional license in a career and technical education field from the Commonwealth of Virginia may substitute the certification, competency credential, or license for (i) the student selected verified credit and (ii) either a science or history and social science verified credit when the certification, license, or credential confers more than one verified credit. The examination or occupational competency assessment must be approved by the Board of Education as an additional test to verify student achievement.

SEQUENTIAL ELECTIVES REQUIREMENT

Students earning the Standard or Modified Standard Diploma must successfully complete two sequential electives to satisfy graduation requirements. Courses used to satisfy this requirement may be in any discipline as long as the courses are not specifically required for graduation. Courses used to satisfy the one-credit requirement in the fine arts or career and technical education **may also** be used to partially satisfy this requirement. For example, if a student selects Art 1 to satisfy the fine arts or career and technical education requirement, then Art 1 and a second course in the art sequence **may also** be used to satisfy the sequential electives requirement. The second course could then also count toward the six other required elective credits. Courses to satisfy the sequential elective requirement do not have to be completed in consecutive years, and they may be semester or year-long courses. Exploratory courses may not be used to meet the sequential elective requirement, but introductory courses may be used. **Specifically approved sequences of courses meeting this requirement can be found on pp. 16-18 of this document.** Questions regarding sequential electives may be directed to the guidance counselor of your child's school.

GRADUATION REQUIREMENTS (continued)

ADVANCED STUDIES DIPLOMA (Entering 9th grade prior to 2011)

Discipline Area	Standard Units of Credit Required (Year Courses)	Verified Units of Credit Required (SOL tests passed w/courses)
English	4	2
Math ¹	4	2
Science ²	4	2
History/Social Studies ³	4	2
Foreign Language ⁴	3	
Health & P.E.	2	
Fine Arts or Career Technical Education ⁵	1	
Electives	2	
Student Selected Tests ⁶		1
Total	24	9

Students must pass 9 Standards of Learning (SOL) end-of-course tests as indicated in the chart above.

¹ Courses completed to satisfy this requirement shall be at or above the level of algebra and shall include at least three different course selections from among: Algebra I, Geometry, Algebra II, or other mathematics courses above the level of Algebra II.

² Courses from at least three different science disciplines from among: earth sciences, biology, chemistry, or physics.

³ Courses completed to satisfy this requirement shall include U.S. and Virginia History, U.S. and Virginia Government, and two courses in either world history or geography or both.

⁴ Courses completed to satisfy this requirement shall include three years of one language or two years of two languages.

⁵ A student who successfully completes a full credit of one of the courses listed under Computer Science, CVGS Senior Technology Seminar, or CVGS College Computer Science in the High School Program of Studies will meet the requirement for a credit for CTE content under the CTE content option.

⁶ A student may utilize additional tests for earning verified credit in computer science, technology, career or technical education or other areas as prescribed by the board in 8 VAC 20-131-110.

ADVANCED STUDIES DIPLOMA WITH LYNCHBURG HONORS SEAL (all students)

Students who wish to earn the Advanced Studies Diploma with Lynchburg Honors Seal must meet all the course and verified credit requirements for the Advanced Studies Diploma. In addition, they must meet the following additional criteria:

- 1) English must include a minimum of six semesters in courses designed for students with above average skills in reading and writing. Four of these semester courses must be taken during the junior and senior years.
- 2) The four math credits must include Algebra 1 and three credits above the level of Algebra 1. The minimum must include progress through trigonometry/functions.
- 3) Science credits must include choices from earth science, Biology 1, Biology 2 Anatomy and Physiology, Biology 2 Ecology, chemistry, physics, AP Chemistry, AP Physics, AP Biology, and Dual Enrollment Biology.
- 4) Social studies credits must include Advanced World History and Geography 1 (to 1500 AD), Advanced World History and Geography 2 (1500 AD to Present) or AP World History, Advanced American History, AP American History, Advanced U.S. Government or AP Government, AP European History, and AP Microeconomics and Macroeconomics.
- 5) Students must take and pass at least two advanced placement or dual enrollment courses (or one of each) in different content areas during the senior year. These courses may be in English, math, science, or social studies.

GRADUATION REQUIREMENTS (continued)

MODIFIED STANDARD DIPLOMA (all students)

1. Every student shall be expected to pursue a Standard Diploma or Advanced Studies Diploma. The Modified Standard Diploma program is intended for certain students at the secondary level who have a disability and are unlikely to meet the credit requirements for a Standard Diploma. Eligibility and participation in the Modified Standard Diploma program shall be determined by the student's Individualized Education Program (IEP) team (including the student, as appropriate) at any point after the student's eighth grade year.
2. The school must secure the informed written consent of the parent/guardian and the student to choose this diploma program. Such a choice occurs only after review of the student's academic history and the full disclosure of the student's options.
3. The student who has chosen to pursue a Modified Standard Diploma shall also be allowed to pursue the Standard or Advanced Studies Diploma at any time throughout that student's high school career, and the student must not be excluded from courses and tests required to earn a Standard or Advanced Studies Diploma.
4. Students pursuing the Modified Standard Diploma shall pass literacy and numeracy competency assessments prescribed by the state Board of Education.
5. Courses designed to satisfy the requirements of the Modified Standard Diploma are listed in a section near the end of the Program of Studies.

Credits required for a Modified Standard Diploma (all students)

Discipline Area	Standard Units of Credit Required (Year Courses)
English	4
Math ¹	3
Science ²	2
Social Studies ³	2
Health and P.E.	2
Fine or Career Technical Education	1
Electives ⁴	6
Total	20

¹ Courses completed shall include content from among algebra, geometry, personal finance, and statistics in courses that have been approved by the State Board of Education.

² Courses completed shall include content from at least two of the following: earth science, biology, chemistry, or physics in courses approved by the State Board of Education.

³ Courses completed shall include one unit of credit in U.S. and Virginia History and one unit of credit in U.S. and Virginia Government in courses approved by the state Board of Education.

⁴ Courses completed shall include at least two sequential electives as required for the Standard Diploma.

SPECIAL DIPLOMA (all students)

Students identified with disabilities who complete the requirements of their individualized education programs shall be awarded special diplomas by local school boards if they do not fulfill any other diploma requirements.

CERTIFICATE OF PROGRAM COMPLETION (all students)

Students who have completed a prescribed course of study as defined by the local school board shall be awarded certificates by local school boards if the students do not qualify for diplomas.

GENERAL ACHIEVEMENT DIPLOMA (all students)

Students who exit high school without a diploma but then plan to pursue a General Achievement Diploma (GAD) must meet both the course credit and testing requirements of this program. Additional information on these programs is available by contacting the Amelia Pride Center at 522-3742.

GRADUATION REQUIREMENTS (continued)

The following Requirements are in effect for students entering ninth grade for the first time in the fall of 2011 and beyond.

STANDARD DIPLOMA (Entering 9th grade in fall of 2011 or later)

Discipline Area	Standard Units of Credit Required	Verified Credits Required
English	4	2
Mathematics ¹	3	1
Laboratory Science ^{2, 6}	3	1
History and Social Sciences ^{3, 6}	3	1
Health and Physical Education	2	
Foreign Language, Fine Arts or Career and Technical Education ⁷	2	
Economics and Personal Finance	1	
Electives ⁴	4	
Student Selected Test ⁵		1
Total	22	6

1. Courses completed to satisfy this requirement shall include at least two different course selections from among: Algebra 1, Geometry, Algebra, Functions, and Data Analysis, Algebra 2, or other mathematics courses above the level of Algebra 2.
2. Courses completed to satisfy this requirement shall include course selections from at least two different science disciplines: earth sciences, biology, chemistry, or physics.
3. Courses completed to satisfy this requirement shall include U.S. and Virginia History, U.S. and Virginia Government, and one course in either world history or geography or both.
4. Courses to satisfy this requirement shall include at least two sequential electives as required by the Standards of Quality.
5. A student may utilize additional tests for earning verified credit in computer science, technology, career and technical education, economics, or other areas as prescribed by the board in 8 VAC 20-131-110.
6. Students who complete a career and technical education program sequence and pass an examination or occupational competency assessment in a career and technical education field that confers certification or an occupational competency credential from a recognized industry, or trade or professional association or acquires a professional license in a career and technical education field from the Commonwealth of Virginia may substitute the certification, competency credential, or license for (i) the student selected verified credit and (ii) either a science or history and social science verified credit when the certification, license, or credential confers more than one verified credit. The examination or occupational competency assessment must be approved by the Board of Education as an additional test to verify student achievement.
7. Pursuant to Section 22.1-253.13:4, Code of Virginia, credits earned for this requirement shall include one credit in fine or performing arts or career and technical education.

GRADUATION REQUIREMENTS (continued)

ADVANCED STUDIES DIPLOMA (Entering 9th grade in fall of 2011 or later)

Discipline Area	Standard Units of Credit Required	Verified Credits Required
English	4	2
Mathematics ¹	4	2
Laboratory Science ²	4	2
History and Social Sciences ³	4	2
Foreign Language ⁴	3	
Health and Physical Education	2	
Fine Arts or Career and Technical Education	1	
Economics and Personal Finance	1	
Electives	3	
Student Selected Test ⁵		1
Total	26	9

1. Courses completed to satisfy this requirement shall include at least three different course selections from among: Algebra 1, Geometry, Algebra 2, or other mathematics courses above the level of Algebra 2.
2. Courses completed to satisfy this requirement shall include course selections from at least three different science disciplines from among: earth sciences, biology, chemistry, or physics.
3. Courses completed to satisfy this requirement shall include U.S. and Virginia History, U.S. and Virginia Government, and two courses in either world history or geography or both.
4. Courses completed to satisfy this requirement shall include three years of one language or two years of two languages.
5. A student may utilize additional tests for earning verified credit in computer science, technology, career or technical education, economics, or other areas as prescribed by the board in 8 VAC 20-131-110.

ADVANCED STUDIES DIPLOMA WITH LYNCHBURG HONORS SEAL (all students)

Students who wish to earn the Advanced Studies Diploma with Lynchburg Honors Seal must meet all the course and verified credit requirements for the Advanced Studies Diploma. In addition, they must meet the following additional criteria:

- 1) English must include a minimum of six semesters in courses designed for students with above average skills in reading and writing. Four of these semester courses must be taken during the junior and senior years.
- 2) The four math credits must include Algebra 1 and three credits above the level of Algebra 1. The minimum must include progress through trigonometry/functions.
- 3) Science credits must include choices from earth science, Biology 1, Biology 2 Anatomy and Physiology, Biology 2 Ecology, chemistry, physics, AP Chemistry, AP Physics, AP Biology, and Dual Enrollment Biology.
- 4) Social studies credits must include Advanced World History and Geography 1 (to 1500 AD), Advanced World History and Geography 2 (1500 AD to Present) or AP World History, Advanced American History, AP American History, Advanced U.S. Government or AP Government, AP European History, and AP Microeconomics and Macroeconomics.
- 5) Students must take and pass at least two advanced placement or dual enrollment courses (or one of each) in different content areas during the senior year. These courses may be in English, math, science, or social studies.

GRADUATION REQUIREMENTS (continued)

STANDARD TECHNICAL DIPLOMA (Entering 9th grade in fall of 2011 or later)

Discipline Area	Standard Units of Credits Required	Verified Credits Required
English	4	2
Mathematics ¹	3	1
Laboratory Science ^{2, 5}	3	1
History and Social Sciences ^{3, 5}	3	1
Health and P.E.	2	
Fine Arts or Foreign Language,	1	
Economics and Personal Finance	1	
Career and Technical Education ⁴	4	
Electives	1	
Student Selected ⁶		1
Total	22	6

1. Courses completed to satisfy this requirement shall include at least three different course selections from among: Algebra 1, Geometry, Algebra Functions and Data Analysis, or Algebra 2 or other mathematics courses above the level of Algebra 2.
2. Courses completed to satisfy this requirement shall include course selections from at least three different science disciplines from among: earth sciences, biology, chemistry, or physics.
3. Courses completed to satisfy this requirement shall include U.S. and Virginia History, U.S. and Virginia Government, and one course in either world history or geography or both.
4. Courses completed to satisfy this requirement must include a career concentration as approved by the board. If a career concentration includes a specific assessment approved by the board and a student is eligible to take the assessment, then the student must take this assessment.
5. Students who complete a career and technical education program sequence and pass an examination or occupational competency assessment in a career and technical education field that confers certification or an occupational competency credential from a recognized industry or trade or professional association or acquires a professional license in a career and technical education field from the Commonwealth of Virginia may substitute the certification competency credential or license for (i) the student selected verified credit and (ii) either a science or history and social science verified credit when the certification license or credential confers more than one verified credit. The examination or occupational competency assessment must be approved by the board as an additional test to verify student achievement.
6. A student may utilize additional tests for earning verified credit in computer science, technology, career and technical education, economics or other areas as prescribed by the state Board of Education in 8 VAC 20-131-110.

GRADUATION REQUIREMENTS (continued)

ADVANCED TECHNICAL DIPLOMA (Entering 9th grade in fall of 2011 or later)

Discipline Area	Standard Units of Credit Required	Verified Credits Required
English	4	2
Mathematics ¹	4	2
Laboratory Science ²	4	2
History and Social Sciences ³	4	2
Foreign Language ⁴	3	
Health and Physical Education	2	
Fine Arts or Career Technical Education	1	
Economics and Personal Finance	1	
Career and Technical Education ⁵	3	
Student Selected Test ⁶		1
Total	26	9

1. Courses completed to satisfy this requirement shall include at least three different course selections from among: Algebra 1, Geometry, Algebra 2, or other mathematics courses above the level of Algebra 2.
2. Courses completed to satisfy this requirement shall include course selections from at least three different science disciplines from among: earth sciences, biology, chemistry, or physics.
3. Courses completed to satisfy this requirement shall include U.S. and Virginia History, U.S. and Virginia Government, and two courses in either world history or geography or both.
4. Courses completed to satisfy this requirement shall include three years of one language or two years of two languages.
5. Courses completed to satisfy this requirement must include a career concentration as approved by the board. If a career concentration includes a specific assessment approved by the board and the student is eligible to take the assessment, then the student must take this assessment to fulfill this requirement.
6. A student may utilize additional tests for earning verified credit in computer science, technology, career or technical education, economics, or other areas as prescribed by the state Board of Education in 8 VAC 20-131-110.

The requirements for a Modified Standard Diploma, Special Diploma, General Achievement Diploma, Certificate of Completion and the additional requirements for the Lynchburg Honors Seal to be added to an Advanced Studies Diploma are the same for all students.

Promotion and Course Load

According to Lynchburg City School Board Policies and Administrative Regulations Policy 7-25 Promotion, Retention, Acceleration high school credit requirements for promotion are as follows:

9-10th grades (4 credits)
 10-11th grades (9 credits)
 11-12th grades (15 credits)

On April 16, 2010, the school board approved revisions to P 7-24 Student Course Load that states students in grades 9-11 must carry the equivalent of six credit-bearing courses and must elect to carry another approved course, a repeat course, or a study hall in seventh period. All students in grade twelve (senior students) must carry the equivalent of four credit-bearing courses. Unless a waiver is granted, senior students must also carry other approved courses, repeat courses, or study halls in the other three periods. Senior students for whom a waiver is granted may be dismissed from school after the fourth, fifth, or sixth period. Transportation from school to home will not be provided for students who are dismissed early. For additional information, please contact your appropriate guidance counselor.

AWARDS FOR EXEMPLARY PERFORMANCE

Students who complete the requirements for a diploma may be eligible for the following seals if they meet the requirements as defined in the *Regulations Establishing Standards for Accrediting Public Schools in Virginia*:

1. Students who complete the requirements for an Advanced Studies Diploma with an average grade of "B" or better and successfully complete college-level coursework that will earn the student at least nine transferable college credits in Advanced Placement (AP), or dual enrollment courses shall receive the **Governor's Seal** on the diploma.
2. Students who complete the requirements for a Standard Diploma or Advanced Studies Diploma with an average grade of "A" shall receive a **Board of Education Seal** on the diploma.
3. The Board of Education's **Career and Technical Education Seal** will be awarded to students who earn a Standard or Advanced Studies Diploma and
 - a. complete a prescribed sequence of courses in a career and technical education concentration or specialization that they choose and maintain a "B" or better average in those courses; or
 - b. pass an examination or an occupational competency assessment in a career and Virginia Department of Education technical education concentration or specialization that confers certification or occupational competency credential from a recognized industry, trade or professional association or
 - c. acquire a professional license in that career and technical education field from the Commonwealth of Virginia. The Board of Education shall approve all professional licenses and examinations used to satisfy these requirements.
4. The Board of Education's **Seal of Advanced Mathematics and Technology** will be awarded to students who earn either a Standard or Advanced Studies Diploma and satisfy all of the mathematics requirements for the Advanced Studies Diploma (four units of credit including Algebra II; two verified units of credit) with a "B" average or better; and either
 - a. pass an examination in a career and technical education field that confers certification from a recognized industry, or trade or professional association; or
 - b. acquire a professional license in a career and technical education field from the Commonwealth of Virginia; or
 - c. pass an examination approved by the board that confers college-level credit in a technology or computer science area. The Board of Education shall approve all professional licenses and examinations used to satisfy these requirements.
5. The Board of Education's **Seal for Excellence in Civics Education** will be awarded to students who earn either a Standard or Advanced Studies Diploma and: (i) complete Virginia and United States History and Virginia and United States Government courses with a grade of "B" or higher; and, (ii) have good attendance and no disciplinary infractions as determined by local school board policies and, (iii) complete 50 hours of voluntary participation in community service or extracurricular activities. Activities that would satisfy the requirements of clause (iii) of this subdivision include:
 - a. volunteering for a charitable or religious organization that provides services to the poor, sick or less fortunate;
 - b. participating in Boy Scouts, Girl Scouts, or similar youth organizations;
 - c. participating in JROTC;
 - d. participating in political campaigns or government internships, or Boys State, Girls State, or Model General Assembly;
 - e. participating in school-sponsored extracurricular activities that have a civics focus.
 - f. any student who enlists in the United States military prior to graduation will be deemed to have met this community service requirement.

GRADE POINT AVERAGE (GPA) CALCULATIONS

The Grade Point Average (GPA) calculation is a way to quantify the overall academic achievement of a student in a single number. The GPA calculation is used for ranking graduating students and is often requested on applications for awards, recognitions, certain memberships or positions, and on college applications. This value is determined by the grades a student earns and by the level of difficulty of the courses taken.

In the Lynchburg City Schools, there are three levels of courses, and each allocates a different number of quality points for a given grade. For most classes, an "A" is worth 4 points, a "B" is worth 3 points, a "C" is worth 2 points, a "D" is worth 1 point, and an "F" is worth zero points. If a student takes an advanced level course, an additional 0.5 points is added to any grade earned above an "F". If a student takes an Advanced Placement (AP) course, an additional full point is added to any grade earned above an "F".

Points Per Semester Credit		
Advanced Placement Courses	Advanced Courses	All Other
A - 5	A - 4.5	A - 4
B - 4	B - 3.5	B - 3
C - 3	C - 2.5	C - 2
D - 2	D - 1.5	D - 1
F - 0	F - 0	F - 0

Calculating the Semester GPA

To calculate the GPA for a given semester, total the Quality Points (QP) earned for the grade in each class. Divide this sum by the number of classes taken. For example, if a student had 6 graded classes and earned three "A's" and three "B's," the calculation would be $4 + 4 + 4 + 3 + 3 + 3 = 21$ Total Quality Points which, when divided by six total classes, yields a semester GPA of 3.5.

If a student takes an advanced level or Advanced Placement (AP) course, each grade is worth more QP. The calculation of the semester GPA follows the same process, however. Using the previous example, if the first "A" was in an advanced course and the last "B" was in an AP course, the calculation would be $4.5 + 4 + 4 + 3 + 3 + 4 = 22.5$ Total Quality Points. When divided by six classes, this total yields a semester GPA of 3.75.

If you would like additional explanation about these calculations, please contact the guidance department at your child's school.

WEIGHTED GPA CLASSES

ADVANCED PLACEMENT (AP) COURSES

As mentioned previously, due to the rigor and work load, all of these AP courses are weighted at 5.0 quality points for an “A.” All students completing Advanced Placement (AP) courses are responsible for the testing fee assessed by E.T.S. (unless a fee waiver is granted) and must take the associated AP exams in May. Fee waiver forms are available in the guidance offices for students with demonstrated financial need. If a student is unable to participate in the AP exam for a course, that course will be recognized on the student’s transcript as an advanced level course (weighted at 4.5 rather than 5.0 quality points) for the second semester, and the student must sit for the corresponding final exam (unless a senior exam exemption applies) and that exam will constitute 25% of the student’s second semester grade for the course. In the case of extreme extenuating circumstances, appeals to this practice may be submitted to the assistant superintendent of curriculum and instruction.

- Governor’s School courses as noted in the program
- Advanced Placement Language/Composition
- Advanced Placement Literature
- Advanced Placement American History
- Advanced Placement World History
- Advanced Placement European History
- Advanced Placement Micro and Macro Economics
- Advanced Placement Calculus AB
- Advanced Placement Calculus BC
- Advanced Placement Statistics
- Advanced Placement Latin (Vergil)
- Advanced Placement Spanish Language 5
- Advanced Placement French Language 5
- Advanced Placement German Language 5
- Advanced Placement American Government
- Advanced Placement Comparative Government
- Advanced Placement Chemistry
- Advanced Placement Physics
- Advanced Placement Biology
- Advanced Placement Art History
- Advanced Placement Portfolio Art
- Advanced Placement Music Theory
- Other courses as noted in the current Virtual Virginia On-Line Program brochure

VIRTUAL VIRGINIA COURSES <http://www.virtualvirginia.org>

In addition to the AP courses offered locally, the Lynchburg City Schools’ high schools recognize and participate in Virginia’s VIRTUAL AP SCHOOL. Students may participate in these distance learning courses if students meet all prerequisite and eligibility criteria, including prior approval by the high school principal. If students are enrolled in AP virtual courses then students are responsible for the testing fee assessed by E.T.S. (unless a fee waiver is granted) and must take the associated exams in May. Fee waiver forms are available in the guidance offices for students with demonstrated financial need. The tuition and testing fees for the courses are waived for students who qualify for the Early College Scholars Program. These virtual AP courses are graded and weighted at a 5.0 for an A (just as other AP courses are), and they are equivalent in rigor and work load to on-site AP courses, however, not all virtual courses are at the advanced placement level. There are non-weighted courses available as well. Students who are most successful in online or televised courses are those who can work independently with minimum supervision, have good time management skills, and a strong desire to learn. A successful online student can stay on task and maintain a regular schedule of logging on and keeping up with the readings, course assignments, homework, and other expectations. Interested students should contact their guidance counselor for more information.

Criteria for Participation

1. Only juniors or seniors will be scheduled into Virtual AP courses.
2. Only students who have successfully completed an AP level course in the past will be scheduled into Virtual AP courses.
3. Only students who have completed any and all prerequisites listed for the course in the Lynchburg City Schools High School Program of Studies will be scheduled into a Virtual AP course.
4. Students will only be scheduled into Virtual AP courses for which a section of that same course is not being offered in the high school that year. Exceptions due to rare scheduling conflicts (i.e., VSA or CVGS schedules must be approved by the assistant superintendent of curriculum and instruction.)
5. Students will be scheduled into only one Virtual AP course during a period.
6. Students will only be scheduled into Virtual AP courses during the seven defined periods during the regular school day.
7. Students will not be scheduled into any Virtual AP courses if it would cause them to then have more than seven courses in a given semester.
8. If a student is not an Early College Scholar, the student will be required to pay the tuition charge for the course, as well as the AP exam fee. Currently the tuition charge is \$131.25 per course. AP exam fees are about \$90.
9. The student must obtain prior approval by the high school principal for any Virtual Virginia course.

Additional Information

After three weeks from the start of the course, students will NOT be allowed to drop the course. They will complete the course and the grade that they earn will be transcribed and included in their GPA calculation. The guidance counselor at each school will provide the parents of students being scheduled into a Virtual course with all the information noted in this section.

In addition, both the student and the parent will be required to sign a form indicating that they understand the rigor of the courses, the nature of the instruction, the need for the student to be self-motivated and self-monitoring, and the specifics of the “drop/withdrawal” period. The guidance counselor at each school will contact the parents of each student enrolled in a Virtual course prior to the end of the first three weeks of the course in order to remind them of the deadline for dropping the course.

WEIGHTED GPA CLASSES (continued)

Courses Available Through the Virtual Virginia School

Please note that a “D,” indicating distance learning, will be at the end of each of the Virtual AP course numbers. In some cases this will be the only difference between the on-site AP course number and the Virtual AP course number.

AP Courses not available in LCS High School Program of Studies

AP Psychology	3439AD (and BD)
AP Computer Science	3729AD (and BD)
AP Environmental Science	3479AD (and BD)
AP Human Geography	4459AD (and BD)

If you have any questions about non-weighted or advanced placement courses available through Virtual Virginia, please visit the Virtual Virginia website: <http://www.virtualvirginia.org>. For questions regarding eligibility requirements, please contact your guidance counselor.

ADVANCED COURSES

The following courses are at an advanced level. Due to the rigor and work load, all of these courses are weighted at 4.5 quality points for an “A.”

- Governor’s School courses as noted in the program
- Advanced World Literature & Composition 1
- Advanced World Literature & Composition 2
- Advanced American & World Literature & Composition
- Advanced English Literature & Composition
- Advanced Composition (Dual Enrollment)
- Advanced Algebra in the 8th grade
- Advanced Earth Science in the 8th grade
- Advanced Algebra 2
- Advanced Geometry with Trigonometry
- Advanced Math Analysis
- Advanced Pre-Calculus/Applied Calculus (Dual Enrollment)
- Advanced Physics
- Advanced Chemistry
- Advanced Biology
- Advanced College Biology (Dual Enrollment)
- Advanced World History & Geography 1 (to 1500 AD)
- Advanced World History & Geography 2 (1500 AD to Present)
- Advanced American History
- Advanced U.S. Government
- Advanced French 4
- Advanced Spanish 4
- Advanced German 4
- Advanced Latin Literature
- Advanced Studio Art
- Advanced Building Trades 2/Carpentry 1 (Dual Enrollment)
- Advanced Computer Systems Technology 2/PC Repair 1 (Dual Enrollment)
- Advanced Precision Machining 2/Machine Tools 1 (Dual Enrollment)
- Advanced Nuclear Technologies (Dual Enrollment)
- Advanced Emergency Medical Technician (E.M.T.) (Dual enrollment)
- Advanced Economics and Personal Finance
- Advanced Early Childhood Education 2 (Dual Enrollment)

INDEPENDENT STUDY COURSES

Independent study courses provide an opportunity for conscientious and mature students to schedule a course which they otherwise would not be able to take. These courses are scheduled individually, and they require the participation of a certified instructor and the prior approval of the principal. The instructor must meet with the student at least once a week, and the student must complete all work and tests assigned. **All independent study courses are graded pass/fail.** The student will receive credit for the course, and the course will appear on the student’s transcript. A student may take an advanced placement course as independent study to prepare for the AP exam, but the course will be graded Pass/Fail and will not count in the cumulative GPA. The student could still receive college credit by obtaining an acceptable score on the AP exam. Course numbers used for independent study courses include the following: Acting (7310A, 7310B); Technical Theater (7320A, 7320B); Art (7330A, 7330B); Mathematics (7220A, 7220B); English (7210A, 7210B); Social Studies (7240A, 7240B); Science (7230A, 7230B); Foreign Language (7250A, 7250B); Music (7340A, 7340B); Technology (7350A, 7350B), and Physical Education (7590A, 7590B, 7510A, 7501B).

WITHDRAWAL FROM A COURSE BEFORE THE END OF THE SEMESTER

All requests for a student to be withdrawn from a course shall be made in writing, signed by a parent/guardian, and turned in to the guidance department by the end of the 15th school day of the semester. If a student is withdrawn after the 15th school day of the semester, the student’s transcript will reflect the course and a grade of withdrawal passing (WP) or withdrawal failing (WF) for the semester. These designations (WP and WF) are not considered in Grade Point Average calculations. A parent/guardian must file a written request for such consideration with the building principal, and that request must clearly indicate the extenuating circumstances to justify a withdrawal. For additional procedures, please refer to Lynchburg City School Board Policies and Administrative Regulations 6-58.

NCAA & NAIA COLLEGE FRESHMAN ATHLETIC ELIGIBILITY STANDARDS

All potential college student-athletes must register with the NCAA Initial-Eligibility Clearinghouse and meet NCAA academic requirements. Excerpts from the Eligibility Standards are provided on this page. Please see your guidance counselor for additional information.

Core Courses

- **NCAA Division I requires 16 core courses as of August 1, 2008.** This rule applies to any student first entering any Division I college or university on or after August 1, 2008. Please see the chart below for a breakdown of this 16 core-course requirement.
- **NCAA Division II requires 14 core courses.** See the breakdown of core-course requirements below. Please note, Division II will require 16 core courses beginning August 1, 2013.

Test Scores

- **Division I** has a sliding scale for test score and grade-point average.
- **Division II** has a minimum SAT score requirement of 820 or an ACT sum score of 68.
- The SAT score used for NCAA purposes includes **only** the critical reading and math sections. The writing section of the SAT is not used.
- The ACT score used for NCAA purposes is a **sum** of the four sections on the ACT: English, mathematics, reading and science.
- **All SAT and ACT scores must be reported directly to the NCAA Eligibility Center by the testing agency. Test scores that appear on transcripts will not be used. When registering for the SAT or ACT, use the Eligibility Center code of 9999 to make sure the score is reported to the Eligibility Center.**

Grade-Point Average

- Only core courses are used in the calculation of the grade-point average.
- **Be sure** to look at your high school's list of NCAA-approved core courses on the Eligibility Center's Web site to make certain that courses being taken have been approved as core courses. The Web site is www.ncaaclearinghouse.net.
- **Division I** grade-point-average requirements are listed on the NCAA web site.
- **The Division II** grade-point-average requirement is a minimum of 2.0.

DIVISION I 16 Core-Course Rule	
16 Core Courses:	
4	years of English.
3	years of mathematics (Algebra I or higher).
2	years of natural/physical science (1 year of lab if offered by high school).
1	year of additional English, mathematics or natural/physical science.
2	years of social science.
4	years of additional courses (from any area above, foreign language or non-doctrinal religion/philosophy).

DIVISION II 14 Core-Course Rule	
14 Core Courses:	
3	years of English.
2	years of mathematics (Algebra I or higher).
2	years of natural/physical science (1 year of lab if offered by high school).
2	years of additional English, mathematics or natural/physical science.
2	years of social science.
3	years of additional courses (from any area above, foreign language or non-doctrinal religion/philosophy).

PLEASE NOTE: Beginning August 1, 2013, students planning to attend an NCAA Division II institution will be required to complete 16 core courses.

OTHER IMPORTANT INFORMATION:

Students enrolling at an NCAA Division I or II institution for the first time need to complete the amateurism questionnaire through the Eligibility Center Web site. Students need to request final amateurism certification prior to enrollment.

For more information regarding the rules, please go to www.ncaa.org. You should click on "Academics and Athletes" then "Eligibility and Recruiting." You can also visit the Eligibility Center Web site at www.ncaaclearinghouse.net.

You can also call the NCAA Eligibility Center if you have questions. The toll-free number is 877-262-1492.

NAIA	
Graduate from high school and also meet two out of three of the following requirements:	
•	Achieve a minimum of 18 on the ACT or 860 on the SAT
•	Achieve a minimum GPA of 2.0
•	Graduate in the top half of the senior class

Sequential Electives

The following sequences are approved to meet the sequential electives requirement of the Standard Diploma or Modified Standard Diploma.

Business Management and Marketing Course sequences:

Business Law Business Management Computer Applications Keyboarding Keyboarding Applications Personal Finance & Economics	Followed by	Accounting 1
Accounting 1 Computer Applications Personal Finance & Economics	Followed by	Accounting 2
Business Law Business Management Computer Applications Keyboarding Keyboarding Applications	Followed by	Computer Information Systems
Computer Applications Computer Information Systems Keyboarding Keyboarding Applications	Followed by	Design, Multimedia & Web Technologies
Business Law Business Management Computer Applications	Followed by	Principles of Business & Marketing
Business Law Business Management Computer Applications	Followed by	Personal Finance & Economics
Keyboarding Keyboarding Applications	Followed by	Computer Applications
Keyboarding	Followed by	Keyboarding Applications
Business Management Personal Finance & Economics Principles of Business and Marketing Sports, Entertainment & Recreation Marketing	Followed by	Marketing 1
Sports, Entertainment & Recreation Marketing Marketing 1	Followed by	Marketing 2
Personal Finance & Economics Principles of Business & Marketing	Followed by	Sports, Entertainment & Recreation Marketing
Coop Tech Education 1	Followed by	Coop Tech Education 2
Public Speaking 1	Followed by	Public Speaking 2
Accelerated Reading 1	Followed by	Accelerated Reading 2

Communication & Information Systems Sequences:

Graphic Systems Technology 1	Followed by	Design, Multimedia & Web Design
Communication Systems	Followed by	Video & Media Technology
Computer Maintenance Introduction to Information Technology	Followed by	Computer Systems Technology 1
Computer Systems Technology 1	Followed by	Computer Systems Technology 2
Intro to Information Technology Computer Systems Technology 1	Followed by	Computer Networking 1
Computer Networking 1	Followed by	Computer Networking 2
Computer Programming 1	Followed by	Computer Programming 2

Sequential Electives (continued)

Cultural Arts

Orchestra 1	Followed by	Orchestra 2
Concert Band 1	Followed by	Symphonic Band 1
Concert Band 1 Symphonic Band 1	Followed by	Jazz Ensemble Wind Ensemble Percussion Ensemble
Chorus 1	Followed by	Chorus 2
Chorus 1	Followed by	Chorus 3
Chorus 2	Followed by	Chorus 3
Art 1	Followed by	Drawing Painting 1 Sculpture 1 Digital Photography and Printmaking Commercial Art
Painting 1	Followed by	Painting 2
Sculpture 1	Followed by	Sculpture 2
Introduction To Theater	Followed by	Musical Theatre Dance Acting 1 Applied Theatre Tech 1 Technical Theatre 1 Design Technical Theatre 1 Production
Acting 1	Followed by	Acting 2
Applied Theatre Tech 1	Followed by	Applied Theatre Tech 2
Technical Theatre 1 Design	Followed by	Technical Theatre 2 Costuming
Technical Theatre 1 Production	Followed by	Technical Theatre 2 Costuming

Note: Taking Orchestra 2, Concert Band 1, or Chorus 1 twice for elective credit may fulfill the sequential elective requirement as long as the student is progressing through a set of skills outlined in the curriculum.

Foreign Languages

French 1	Followed by	French 2
German 1	Followed by	German 2
Latin 1	Followed by	Latin 2
Spanish1	Followed by	Spanish 2

Health Sciences

Dental Careers 1	Followed by	Dental Careers 2
Medical Assistant 1	Followed by	Medical Assistant 2
Athletic Training 1	Followed by	Athletic Training 2

Note: Health and Medical Sciences Exploratory may not be used to partially fulfill the sequential elective requirement.

Human Services & Resources

Intro to Culinary Arts	Followed by	Culinary Arts 1
Culinary Arts 1	Followed by	Culinary Arts 2
Cosmetology 1	Followed by	Cosmetology 2
Intro to Early Childhood	Followed by	Early Childhood 1 Teachers for Tomorrow
Early Childhood 1	Followed by	Early Childhood 2
Any JROTC Courses	Followed by	Any other JROTC Courses

Sequential Electives (continued)

Industrial, Manufacturing & Engineering Systems

Basic Technical Drawing	Followed by	Architectural Drawing Engineering Drawing Nuclear Technology
Architectural Drawing Engineering Drawing	Followed by	Nuclear Technology
Intro to Building Trades	Followed by	Building Trades 1
Building Trades 1	Followed by	Building Trades 2
Precision Machining 1	Followed by	Precision Machining 2
Intro to Auto Body Repair	Followed by	Auto Body Repair 1
Auto Body Repair 1	Followed by	Auto Body Repair 2
Intro To Auto Service Technology	Followed by	Auto Service Technology 1
Auto Service Technology 1	Followed by	Auto Service Technology 2
Technology Foundations	Followed by	Technology Transfer

Note: Newspaper, Yearbook, Leadership Training, and SOL Review courses may not be used to partially fulfill the sequential elective requirement.

Additional Options for the Modified Standard Diploma Sequential Elective Requirement

Any two of the Writing Skills courses

Any two of the Life Skills courses

Any two of the Work Skills courses

Education for Employment followed by Work Experience 1

Work Experience 1 followed by Work Experience 2

Reading 1 followed by Reading 2

Note: Resource classes do not meet the requirement for sequential electives.

TRANSFER CREDITS

The following information is taken from the *Regulations for Establishing Standards for Accrediting Public Schools in Virginia: 8 VAC 20-131-60*. **A summary table of the graduation requirements for transfer students is provided at the end of this document.**

A. The provisions of this section pertain generally to students who transfer into Virginia high schools. Students transferring in grades K-8 from Virginia public schools or nonpublic schools accredited by one of the approved accrediting constituent members of the Virginia Council for Private Education shall be given recognition for all grade-level work completed. The academic record of students transferring from all other schools shall be evaluated to determine appropriate grade placement in accordance with policies adopted by the local school board.

B. For the purposes of this section, the term "beginning" means within the first 20 hours of instruction per course. The term "during" means after the first 20 hours of instruction per course.

C. Standard or verified units of credit earned by a student in a Virginia public school shall be transferable without limitation regardless of the accreditation status of the Virginia public school in which the credits were earned. Virginia public schools shall accept standard and verified units of credit from other Virginia public schools and state operated programs. Standard units of credit also shall be accepted for courses satisfactorily completed in accredited colleges and universities when prior written approval of the principal has been granted or the student has been given credit by the previous school attended.

D. A secondary school shall accept credits toward graduation received from Virginia nonpublic schools accredited by one of the approved accrediting constituent members of the Virginia Council for Private Education (VCPE). The Board of Education will maintain contact with the VCPE and may periodically review its accrediting procedures and policies as part of its policies under this section. Nothing in these standards shall prohibit a public school from accepting standard units of credit toward graduation awarded to students who transfer from all other schools when the courses for which the student receives credit generally match the description of or can be substituted for courses for which the receiving school gives standard credit, and the school from which the child transfers certifies that the courses for which credit is given meet the requirements of 8 VAC 20-131-110 A. Students transferring into a Virginia public school shall be required to meet the requirements prescribed in 8 VAC 20-131-50 to receive a Standard, Advanced Studies, or Modified Standard Diploma, except as provided by subsection G of this section. To receive a Special Diploma or Certificate of Program Completion, a student must meet the requirements prescribed by the Standards of Quality.

E. The academic record of a student transferring from other Virginia public schools shall be sent directly to the school receiving the student upon request of the receiving school in accordance with the provisions of the 8 VAC 20-150-10, Management of the Student's Scholastic Records in the Public Schools of Virginia.

TRANSFER CREDITS (continued)

F. The academic record of a student transferring into Virginia public schools from other than a Virginia public school shall be evaluated to determine the number of standard units of credit that have been earned, including credit from schools outside the United States, and the number of verified units of credit needed to graduate in accordance with subsection G of this section. Standard units of credit also shall be accepted for courses satisfactorily completed in accredited colleges and universities when the student has been given credit by the previous school attended. Students transferring above the tenth grade from schools or other education programs that do not require or give credit for health and physical education shall not be required to take these courses to meet graduation requirements.

G. Students entering a Virginia public high school for the first time after the tenth grade shall earn as many credits as possible toward the graduation requirements prescribed in 8 VAC 20-131-50. However, schools may substitute courses required in other states in the same content area if the student is unable to meet the specific content requirements of 8 VAC 20-131-50 without taking a heavier than normal course load in any semester, by taking summer school, or by taking courses after the time when he otherwise would have graduated. In any event, no such student shall earn fewer than the following number of verified units, nor shall such students be required to take SOL tests or additional tests as defined in 8 VAC 20-131-110 for verified units of credit in courses previously completed at another school or program of study, unless necessary to meet the requirements listed in subdivisions 1 and 2 of this subsection:

1. For a Standard Diploma:

- a. Students entering a Virginia high school for the first time during the ninth grade or at the beginning of the tenth grade shall earn credit as prescribed in 8 VAC 20-131-50;
- b. Students entering a Virginia high school for the first time during the tenth grade or at the beginning of the eleventh grade shall earn a minimum of four verified units of credit: one each in English, mathematics, history, and science. Students who complete a career and technical education program sequence may substitute a certificate, occupational competency credential or license for either a science or history and social science verified credit pursuant to 8 VAC 20-131-50; and
- c. Students entering a Virginia high school for the first time during the eleventh grade or at the beginning of the twelfth grade shall earn a minimum of two verified units of credit: one in English and one of the student's own choosing.

2. For an Advanced Studies Diploma:

- a. Students entering a Virginia high school for the first time during the ninth grade or at the beginning of the tenth grade shall earn credit as prescribed in 8 VAC 20-131-50;
- b. Students entering a Virginia high school for the first time during the tenth grade or at the beginning of the eleventh grade shall earn a minimum of six verified units of credit: two in English and one each in mathematics, history, and science and one of the student's own choosing; and

TRANSFER CREDITS (continued)

c. Students entering a Virginia high school for the first time during the eleventh grade or at the beginning of the twelfth grade shall earn a minimum of four verified units of credit: one in English and three of the student's own choosing.

H. Students entering a Virginia high school for the first time after the first semester of their eleventh grade year must meet the requirements of subdivision G 1 c or G 2 c of this section. Students transferring after 20 instructional hours per course of their senior or twelfth grade year shall be given every opportunity to earn a Standard, Advanced Studies, or Modified Standard Diploma. If it is not possible for the student to meet the requirements for a diploma, arrangements should be made for the student's previous school to award the diploma. If these arrangements cannot be made, a waiver of the verified unit of credit requirements may be available to the student. The Department of Education may grant such waivers upon request by the local school board in accordance with guidelines prescribed by the Board of Education.

I. Any local school division receiving approval to increase its course credit requirements for a diploma may not deny either the Standard, Advanced Studies, or Modified Standard Diploma to any transfer student who has otherwise met the requirements contained in these standards if the transfer student can only meet the division's additional requirements by taking a heavier than normal course load in any semester, by taking summer school, or by taking courses after the time when he otherwise would have graduated.

J. The transcript of a student who graduates or transfers from a Virginia secondary school shall conform to the requirements of 8 VAC 20-160-10, Regulations Governing Secondary School Transcripts.

K. The accreditation status of a high school shall not be included on the student transcript provided to colleges, universities, or employers. The board expressly states that any student who has met the graduation requirements established in 8 VAC 20-131-50 and has received a Virginia diploma holds a diploma that should be recognized as equal to any other Virginia diploma of the same type, regardless of the accreditation status of the student's high school. It is the express policy of the board that no student shall be affected by the accreditation status of the student's school.

TRANSFER CREDITS (continued)

The following information is taken from the Lynchburg City Schools School Board Regulation 6-58.1:

1. If a particular grade is weighted at the school from which a student transfers and this Division weights the grade for the same course, the transferred grade will be weighted.
2. If a particular grade is weighted at the school from which a student transfers and this Division does not weight the grade for the same course, the transferred grade will not be weighted.
3. If [particular courses are] noted as honors program courses and are weighted in this Division, the grades will be weighted even if the other division did not weight [them].
4. If [particular courses are] not weighted [and are not] noted as honors courses elsewhere, the grades will not be weighted.

Course Numbers for Transfer Courses

When possible, transfer courses should be equated to corresponding courses in the Program of Studies, and those courses should be transcribed with a "T" appended to the course number.

However, in some cases courses approved for credit in other states might not have an equivalent match in this Program of Studies. In those cases, a generic course number indicating the grade and content area can be used. All such courses are weighted at 4.0 for an "A." The course numbers in the table below represent the first semester courses. By placing a "B" where the "A" is, the second semester course numbers can be derived.

Subject Area	Grade 9	Grade 10	Grade 11	Grade 12
English	1190AT	1100AT	1110AT	1120AT
Math	2190AT	2100AT	2110AT	2120AT
Science	3190AT	3100AT	3110AT	3120AT
History	4190AT	4100AT	4110AT	4120AT
Elective	5190AT	5100AT	5110AT	5120AT

First-time Transfers to a Virginia Public School

NOTE: This information is relevant for students transferring into a Virginia public school for the first time.
Beginning = Within the first 20 hours of instruction and **During** = After the first 20 hours of instruction

During 9th Grade OR Beginning of 10th Grade:		Standard Diploma for 9 th Graders in 2003-04 and beyond	Advanced Studies Diploma 9 th Graders in 2000-01 and beyond
	English	2	2
	Mathematics	1	2
	Science	1	2
	History & Social Science	1	2
	Student Selected	1	1
	Must Earn	6 Verified Credits	9 Verified Credits:
During 10th Grade OR Beginning of 11th Grade:		Standard Diploma for 9 th Graders in 2003-04 and beyond	Advanced Studies Diploma 9 th Graders in 2000-01 and beyond
	English	1	2
	Mathematics	1	1
	Science	1	1
	History & Social Science	1	1
	Student Selected		1
	Must Earn	4 Verified Credits	6 Verified Credits:
During 11th Grade OR Beginning of 12th Grade:		Standard Diploma for 9 th Graders in 2003-04 and beyond	Advanced Studies Diploma 9 th Graders in 2000-01 and beyond
	English	1	1
	Student Selected	1	3
	Must Earn	2 Verified Credits	4 Verified Credits:
During 12th Grade:	Students should be given every opportunity to earn a diploma; if this is not possible, arrange to have the previous school award the diploma; or seek a waiver of the verified credit requirement from the VDOE.		

COURSE OFFERINGS LISTED IN THE PROGRAM OF STUDIES

Art - pg 48

5510 Art 1
5520 Drawing
5530 Painting 1
5540 Painting 2
5550 Sculpture 1
5551 Sculpture 2
5570 Digital Photography &
Printmaking
5580 Commercial Art
5517 Adv. Studio Art
5519 AP Portfolio Art
5529 AP Art History

Architecture & Construction - pg 38

6760 Architectural Drawing
8241 Intro to Building Trades
8240 Building Trades 1
8250 Building Trades 2

Athletic Training - pg 37

5260 Athletic Training 1
5261 Athletic Training 2

Arts, A/V Technology & Communications - pg 38

8561 Communication System
7450 Video & Media Technology

Business, Management, Administration & Finance-pgs 38-39

6160 Accounting 1
6170 Accounting 2
6140 Business Management
6150 Business Law
6340 Computer Information Systems
6260 Design, Multimedia & Web
Technologies
6240 Keyboarding
6250 Keyboarding Applications
6370 Principles of Business &
Marketing

Computer Science- pg 34

3740 Computer Applications
3750 Computer Programming 1
3760 Computer Programming 2

Drama - pg 49

5610 Intro to Theatre
5611 Musical Theatre Dance
5620 Acting 1
5630 Acting 2
5621 History of Musical Theatre
5622 Playwriting
5623 Directing
5640 App Tech Theatre 1
5641 Tech Theatre 1 Design
5360 Jazz Ensemble
5640 App Tech Theatre 1

Drama (continued)

5641 Tech Theatre 1 Design
5642 Tech Theatre 1 Production
5650 App Tech Theatre 2
5651 Tech Theatre 2
5652 Costuming

Economics - pg 24

6151 Personal Finance & Economics
4347 Adv. Econ. & Personal Finance
4439A AP Microeconomics
4449B AP Macroeconomics

English- pgs 25-26

1190 World Lit & Comp 1
1297 Adv. World Lit & Comp
1100 World Lit & Comp 2
1207 Adv. World Lit & Comp 2
1110 American Lit & Comp
1217 Adv. American & World Lit &
Comp
1319 AP Language & Comp
1120 English Lit & Comp
1227 Adv. English Lit & Comp
1328 Adv. College Comp (DE)
1329 AP Lit & Comp
5840 Oral Expression
5850 Public Speaking 1
5860 Public Speaking 2

Education & Training - pgs 39-40

6540 Intro to Early Childhood Ed
6541 Early Childhood Ed 1
6542 Early Childhood Ed 2
6550 Teachers for Tomorrow

Fine Arts Exploratory - pg 50

5461 Arts Appreciation

Foreign Language - pgs 27-29

1590 French 1
1500 French 2
1510 French 3
1527 Adv. French 4
1529 AP French 5
1690 German 1
1600 German 2
1610 German 3
1627 Adv. German 4
1629 AP German 5
1790 Latin 1
1700 Latin 2
1710 Latin 3
1737 Adv. Latin Literature
1729 AP Latin Vergil
1890 Spanish 1
1800 Spanish 2
1810 Spanish 3
1827 Adv. Spanish 4
1829 AP Spanish 5

Health - pg 37

5240 Driver's Ed & Personal Health
5250 Health & Family Living

Health Sciences - pgs 40-41

6840 Health & Medical Sciences Exp
6810 Dental Careers 1
6820 Dental Careers 2
8720 Emergency Medical Tech (DE)
8711 Medical Assistant 1
8712 Medical Assistant 2

Hospitality & Tourism - pg 41

6440 Intro to Culinary Arts
6441 Culinary Arts 1
6442 Culinary Arts 2

Human Services - pg 41

8340 Cosmetology 1
8350 Cosmetology 2

Information Technology - pgs 41-42

8531 Intro to Info Tech
8540 Computer Systems Tech 1
8550 Computer Systems Tech 2
8551 Computer Networking &
Hardware 1
8552 Computer Networking &
Hardware 2

Leadership - pg 50

7770 Leadership Training

Manufacturing - pg 43

8440 Manufacturing Systems
8450 Precision Machine Tech 1
8460 Precision Machine Tech 2/Intro
to Machine Tools

Marketing Sales & Service-pgs 42-43

6942 Sports, Entertainment, & Rec
6951 Marketing 1
6960 Marketing 2
8940 Cooperative Tech Ed 1
8950 Cooperative Tech Ed 2
8960 Cooperative Tech Ed 3 Senior
Intensified

Mathematics - pgs 30-32

2100 Algebra 1 P 2
2110 Algebra, Functions, & Data
Analysis
2290 Algebra 1
2387 Adv. Algebra 1 (gr. 8)
2200 Algebra 2
2397 Adv. Algebra 2
2210 Geometry
2290AP Algebra 1 PETAL

COURSE OFFERINGS LISTED IN THE PROGRAM OF STUDIES (continued)

Mathematics (cont.) pgs 30-32

2397BP Algebra 2/Adv Algebra 2
2307 Adv/ Geometry/Trig
2220 Trig/Functions
2328AC Adv. Pre-Calc (DE)
2230 Computer Mathematics
2338BC App Calc (DE)
2317 Adv. Math Analysis
2429 AP Statistics
2329 AP Calculus AB
2339 AP Calculus AB/BC

Music - pg 47

5340 Concert Band 1
5350 Symphonic Band 1
5370 Wind Ensemble
5380 Percussion Ensemble
5460 Chorus 1
5470 Chorus 2 - Concert Choir
5480 Chorus 3 Ensemble
5410 Orchestra 1
5420 Orchestra 2
5430 Beginning Midi & Computer
Applications in Music
5439 AP Music Theory

Newspaper & Yearbook - pg 50

7410 Newspaper
7420 Yearbook

Physical Education - pg 37

5110 Physical Ed 1
5120 Physical Ed 2
5130 Physical Ed 3
5140 Physical Ed 4
5150 Physical Ed 5
5160 Physical Ed 6
5190 Physical Ed 9
5191 Physical Ed 10

Positive Parenting Program-pg 50

5241 Family Health & Social Dev.
7480 Child Development & Care
7481 Nutrition & Food Preparation

Reserve Officer Training Corps (ROTC) - pgs 45-46

5710 MCJROTC Leadership Ed
5720 MCJROTC Leadership Ed 2
5730 MCJROTC Leadership Ed 3
5740 MCJROTC Leadership Ed 4
5750 AFJROTC 1
5760 AFJROTC 2
5770 AFJROTC 3
5780 AFJROTC 4

(DE=Dual Enrollment)

*Courses for the Modified Standard Diploma or Special Diploma are contained on page 52.

Science - pgs 33-34

3290 Earth Science
3387 Adv. Earth Science (gr. 8)
3200 Biology 1
3397 Adv. Biology 1
3210 Biology 2 Anatomy & Phys.
3211 Biology 2 Ecology
3220 Chemistry
3307 Adv. Chemistry
3317 Adv. Physics
3459 AP Chemistry
3469 AP Physics
3328 Adv. College Biology (DE)
3449 AP Biology

Science, Technology, Engineering & Math - pg 44

6740 Basic Tech Drawing
6750 Engineering Drawing
6770 Nuclear Tech Adv.
6640 Tech Foundations
6650 Tech Transfer

Social Studies - pgs 35-36

4690 World Geo
4290 World History & Geo 1
4397 Adv. World History & Geo 1
4200 World History & Geo 2
4307 Adv. World History & Geo 2
4469 AP World History
4210 American History
4317 Adv. American History
4419 AP American History
4220 US Govt
4327 Adv. US Govt
4429 AP American Govt Politics &
Comparative Govt Politics
4409 AP European History
4740 African-American History

Speech - pg 26

5840 Oral Expression
5850 Public Speaking 15860 Public
Speaking 2

Student Intern Programs – pg 50

7110 Teacher/Office Intern
7120 Computer Student Intern
7130 Elem./Middle Student Intern
7131 General Student Intern

Transportation, Distribution & Logistics – pg 45

8161 Intro to Auto Body Repair
8160 Auto Body Repair 1
8170 Auto Body Repair 2
8141 Intro to Auto Service Tech
8140 Auto Service Tech
8150 Auto Service Tech 2

Academic Support - pg 51

7211 SOL Review – English
7212 SOL Review – Writing
7221 SOL Review – Math
7231 SOL Review – Science
7241 SOL Review – Soc. Stud.
7610 SAT Prep
1930 ESL Support
1192 Accelerating – Reading 1
1130 Accelerating – Reading 2
7222 Math Lab
STUDYA & B Study Hall

Central Va. Governor's School pgs 53-54

3217 Research Course
3219 Physics
2317 Math Analysis
3329 College Bio (DE)
3227 Senior Tech Seminar
3729 College Comp Science (DE)
2329 Calculus-Single Variable (DE)
2228 Connections in Math
2429 Linear Alg./Vector Calc (DE)
3339 Human Anat. & Physiology

*****Any prerequisite listed for a course in any content area may be waived pending principal's approval. Please contact your child's guidance counselor for any questions regarding prerequisites for courses.**

ECONOMICS

**PERSONAL FINANCE & ECONOMICS (6151A, 6151B),
Grades 10-12, 1st & 2nd Sem., One-half Credit per Sem.**

Prerequisite: None

Students explore many facets of financial decision-making involved in daily life. Skills in money management, record keeping, and banking are enhanced through the study of basic concepts of economics, insurance, credit, and other related topics.

**ADVANCED ECONOMICS AND PERSONAL FINANCE A & B
(4347A, 4347B), Grades 10-12, 1st and 2nd Sem. One-half
Credit Per Sem.**

These classes offer a rigorous and challenging introduction to economics for students preparing for college study. Students learn basic economic concepts and become acquainted with the U.S. and global economic systems, developing an understanding of both microeconomics and macroeconomics as well as the practical implications of economics on everyday life.

**ADVANCED PLACEMENT (AP) MICROECONOMICS &
MACROECONOMICS (4439A, 4449B), Grades 11-12, 1st and
2nd Sem. One-half Credit Per Sem.**

The first semester of this course (microeconomics) aims to provide a thorough understanding of the principles of economics that apply to the functions of individual decision makers, both consumers and producers, within the economic system. It places primary emphasis on the nature and functions of product markets and includes the study of factor markets and of the role of government in promoting greater efficiency and equity in the economy. The second semester (macroeconomics) explores the principles of economics that apply to an economic system as a whole. Particular emphasis will be placed on the study of national income and price-level determination, economic performance measures, the financial sector, stabilization policies, economic growth, and international economics. **All students are required to pay both testing fees assessed by E.T.S. (unless a fee waiver is granted) and to take both advanced placement examinations in May.**

ENGLISH

SOME ALTERNATIVES IN CHOOSING AN ENGLISH SEQUENCE

- A - Recommended for students who desire a strong foundation in English to continue their education beyond high school or to enter the workplace.
- Grade 9: World Literature & Composition 1 A & B
 - Grade 10: World Literature & Composition 2 A & B
 - Grade 11: American Literature & Composition A & B
 - Grade 12: English Literature & Composition A & B
- B - Recommended for students who are strong in English and plan to attend college.
- Grade 9: Advanced World Literature & Composition 1 A & B
 - Grade 10: Advanced World Literature & Composition 2 A & B
 - Grade 11: Advanced American & World Lit & Composition A & B
 - Grade 12: Advanced English Literature & Composition A & B
- C - Recommended for students who wish to earn college credit while in high school through dual enrollment or advanced placement classes.
- Grade 11: Advanced Placement Language & Composition A & B
 - Grade 12: Advanced Placement Literature & Composition A & B or Advanced College Composition A & B (dual enrollment)

WORLD LITERATURE & COMPOSITION 1 A & B (1190A, 1190B), Grade 9, 1st & 2nd Sem. One-half Credit Per Sem.

These classes emphasize reading comprehension, vocabulary, study skills, oral communication, and composition skills, including grammar, usage, and mechanics, through the study of world literature. Students will read widely and think, speak, and write about what they have read. Emphasis is on enabling students to develop strategies for future academic success.

ADVANCED WORLD LITERATURE & COMPOSITION 1 A & B (1297A, 1297B), Grade 9, 1st & 2nd Sem. One-half Credit Per Sem.

Designed for students in the advanced diploma program, these classes emphasize reading, thinking, oral communication, and composition skills, including grammar, usage, and mechanics, through the study of world literature. Students must read and write extensively and participate in in-depth literature study. Vocabulary development, study and test-taking skills, and organization skills necessary to meet the demands of the advanced program are integral parts of these classes.

WORLD LITERATURE & COMPOSITION 2 A & B (1100A, 1100B), Grade 10, 1st & 2nd Sem. One-half Credit Per Sem.

With world literature as the vehicle, these classes will follow an integrated approach to language arts, combining reading, writing, grammar, and vocabulary study. Experiences in the classes will reflect the needs of literate adults in the community and stress the processes for writing, speaking, and reading effectively and correctly.

ENGLISH (continued)

ADVANCED WORLD LITERATURE & COMPOSITION 2 A & B (1207A, 1207B), Grade 10, 1st & 2nd Sem. One-half Credit Per Sem.

First semester emphasizes writing instruction through a thematic approach to expository and creative composition genres. Through the study of models and extensive opportunities to write, students improve their writing styles and ability to write different types of compositions. Literature study is used as inspiration for many writing activities. During second semester while continuing to improve writing skills, students engage in an in-depth study of literary works organized in thematic units. Vocabulary development, grammar, usage, and mechanics are stressed in both semesters.

AMERICAN LITERATURE & COMPOSITION A & B (1110A, 1110B), Grade 11, 1st & 2nd Sem. One-half Credit Per Sem.

These classes combine a study of the development of American literature with instruction in communication skills. Vocabulary study, oral reporting, and frequent writing assignments are based on representative selections from each literary period. Near the end of the school year, students will take the 11th grade Standards of Learning tests in literature and writing.

ADVANCED AMERICAN & WORLD LITERATURE & COMPOSITION A & B (1217A, 1217B), Grade 11, 1st & 2nd Sem. One-half Credit Per Sem.

During first semester students analyze pieces of literature considered landmarks of American literature while in second semester the emphasis shifts to landmarks in world literature (e.g. Plato's *Republic*, Shakespeare's *King Lear*, and Hugo's *Les Miserables*). In both semesters students do independent research, read and write extensively, and make oral reports on what they have read and researched. Near the end of the school year, students will take the 11th grade Standards of Learning tests in literature and writing.

ADVANCED PLACEMENT (AP) LANGUAGE & COMPOSITION A & B (1319A, 1319B), Grade 11, 1st & 2nd Sem. One-half Credit Per Sem.

These classes prepare students to take the College Entrance Examination Board Advanced Placement Language and Composition Test. Emphases of the classes are rhetoric and the structure of language as they relate to effective composition. Students will also cover the 11th grade Virginia Standards of Learning in preparation for the required Standards of Learning tests in literature and writing administered near the end of the school year. Students enrolling should be competent in composition and able to work independently on a variety of writing assignments and projects. **All students are required to pay the fee assessed by E.T.S. (unless a fee waiver is granted) and to take the advanced placement examination in May.**

ENGLISH (continued)

ENGLISH LITERATURE & COMPOSITION A & B (1120A, 1120B), Grade 12, 1st & 2nd Sem. One-half Credit Per Sem.

These classes combine a study of English literature, culture, and language development with instruction in communication skills. Instruction in writing a variety of multi-paragraph themes is provided along with the usual activities involving vocabulary study, sentence structure, paragraph development, oral reporting, and research.

ADVANCED ENGLISH LITERATURE & COMPOSITION A & B (1227A, 1227B), Grade 12, 1st & 2nd Sem. One-half Credit Per Sem.

These classes are an in-depth study of major authors in all literary periods of English literature. Instruction in formal organizational patterns in writing and advanced research skills is integral. Students must do independent research, parallel reading, and oral reporting as well as frequent writing assignments and a research paper. The emphasis during second semester is on error-free writing.

ADVANCED COLLEGE COMPOSITION A & B (1328AC, 1328BC), Dual Enrollment English, Grade 12, 1st & 2nd Sem. One-half Credit Per Sem.

These classes offer students achieving a grade of C or better the opportunity to earn six hours of college credit through the dual enrollment program with Central Virginia Community College. A comprehensive survey of major authors in English literature, these classes emphasize the development of writing skills and writing as process, including instruction in formal organizational patterns and style. Students work toward error-free writing and receive instruction in advanced research skills. **Students who have completed the course with a grade of C or better receive 6 semester hours of credit from CVCC for English 111 and 112. Students must qualify for enrollment for this course by taking the CVCC placement test or by ACT or SAT qualifying scores. Because this course is a dual enrollment course, certain fees may apply. (see page 2 for details)**

ADVANCED PLACEMENT (AP) LITERATURE & COMPOSITION A & B (1329A, 1329B), Grade 12, 1st & 2nd Sem. One-half Credit Per Sem.

These classes prepare students to take the College Entrance Examination Board Advanced Placement Literature and Composition Test. Emphases are the analytic reading of fiction and poetry and the writing of critical essays. Students enrolling should be competent in composition, experienced in literary interpretation, and able to think abstractly. Students must also be able to work independently on a variety of reading and writing projects. **All students are required to pay the fee assessed by E.T.S. (unless a fee waiver is granted) and to take the advanced placement examination in May.**

SPEECH

ORAL EXPRESSION (5840A, 5840B), Grades 9-12, 1st or 2nd Sem., One-half Credit.

Content includes the study of skills necessary for the effective presentation of prose, poetry, and dramatic readings as well as persuasive speaking through extemporaneous speaking, oratory and debate.

PUBLIC SPEAKING 1 (5850A, 5850B), Grades 9-12, 1st or 2nd Sem., One-half Credit.

Content includes instruction and practice in clarity of oral expression, logical reasoning, and proper organization of material. The student will learn to prepare speeches to inform, convince, persuade, demonstrate and entertain.

PUBLIC SPEAKING 2 (5860A, 5860B), Grades 9-12, 1st or 2nd Sem., One-half Credit. Prerequisite: 5850

In Public Speaking 2, students will refine oral interpretation skills, expand persuasive speaking skills, perform impromptu speeches, deliver special occasion speeches, and develop expertise in at least one major speech category.

FOREIGN LANGUAGE

The secondary schools offer a sequential program in French, Spanish, German, and Latin. First-year study for high school credit is available to 8th grade students in French, Spanish, and Latin at all three middle schools. Paul Laurence Dunbar Middle School for Innovation also offers first-year study in German and second year study in Spanish for students who have successfully completed the accelerated Spanish program at Dearington Elementary School for Innovation.

Each language in the foreign language offerings is designed for any student who has demonstrated a reasonable proficiency in his or her native language and wishes to develop facility in another language. To obtain full benefit of the language program, students are encouraged to begin study in the 8th or 9th grade. College-bound students are advised to investigate the specific foreign language requirements of colleges in which they have interest. All students should work closely with their counselors in planning their foreign language programs.

In all cases, the prerequisite for a second semester course is the corresponding first semester course.

FRENCH 1 A & B (1590A, 1590B), Grades 8-12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: None

Communicating in French is the highlight of these beginning semesters of language study. Students become involved immediately in using the language to simulate daily life situations. Activities include speaking, listening, writing, reading, and learning about French culture. Correlated audio-visuals serve as stimuli to involve students in conversations of interest to teenagers.

FRENCH 2 A & B (1500A, 1500B), Grades 9-12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: French 1 A & B

Emphasis on the four basic skills of speaking, listening, reading, and writing is continued during second year study. Oral discussions in French based on themes of contemporary interest provide the basis for student involvement. Study of the geography and culture of French-speaking countries is an integral part of the language study. Students' use of concepts and vocabulary is cumulative.

FRENCH 3 A (1510A, 1510B), Grades 10-12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: French 2 A & B

This course builds on the vocabulary and grammar bases acquired in levels 1 and 2. Audio-lingual experiences continue to help students develop both aural and oral competency as they listen to more extensive passages and participate in more complex speaking exercises. The focus on reading and writing also increases at this level as students read excerpts from current literature and read and write about the culture of francophone countries.

FOREIGN LANGUAGE (continued)

ADVANCED FRENCH 4 A & B (1527A, 1527B), Grade 11 or 12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: French 3 A & B

This course focuses on the use of all concepts and vocabulary from previous study in addition to new vocabulary and idioms. Culture-based readings from periodicals and selections from literature are the basis for refining composition and reading skills and provide the topics for conversation. Experience in listening to extended passages develops students' comprehension skills and provides practice in using higher level thinking skills.

ADVANCED PLACEMENT (AP) FRENCH 5 A & B (1529A, 1529B), Grade 12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: French 4 A & B (May be waived by recommendation of instructor.)

This Advanced Placement Language course is equivalent in content and skills developed to the third year college level. Students engage in intensive drills of extemporaneous speaking, grammar review, analyses of reading material and listening to many types of selections to develop a high level of listening comprehension. **All students are required to pay the fee assessed by E.T.S. (unless a fee waiver is granted) and to take the advanced placement examination in May.**

GERMAN 1 A & B (1690A, 1690B), Grades 9-12, Grade 8, Paul Laurence Dunbar Middle School for Innovation Only 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: None

In this introductory course, students become involved with the German language through conversations and readings relating to everyday chores, school, family, leisure-time activities, foods, weather, travel, parties, and shopping. During the second semester, students read longer narratives in the target language about important cities, states, German-speaking regions, and holidays. Authentic audio-visual aids reinforce aural-oral skills while lending authentic cultural insights.

GERMAN 2 A & B (1600A, 1600B), Grades 9-12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: German 1 A & B

German 2 students continue to build facility with the language through conversations and reading/writing activities. Topics first semester include vacations, school, health, home, employment, and clothing. During second semester, students discuss leisure time activities, cars, famous Germans, and selected German-speaking cities.

FOREIGN LANGUAGE (continued)

GERMAN 3 A & B (1610A, 1610B), Grades 10-12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: German 2 A & B

The refinement of oral and written communication skills through conversational practice and the reading of selections by modern German authors constitute the major portion of third-year study. Students read and discuss German children's literature, poetry, current events from newspaper and magazine articles, and short stories. During discussions, students learn about levels of language and the appropriateness of each in various situations.

ADVANCED GERMAN 4 A & B (1627A, 1627B), Grades 11 & 12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: German 3 A & B

At this level of language study, students are expected to have achieved facility in the German language, which is now used in instruction, conversation, reading, and discussion. Students continue to discuss German literature and everyday topics of conversation. In addition, frequent writing assignments enhance skills in grammar and serve to increase vocabulary.

ADVANCED PLACEMENT (AP) GERMAN 5 A & B (1629A, 1629B), Grade 12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: German 4 A & B (may be waived by recommendation of instructor)

This Advanced Placement Language course is equivalent in content and skills developed to the third year college level. Students engage in intensive drills of extemporaneous speaking, grammar review, analyses of reading material and listening to many types of selections to develop a high level of listening comprehension. **All students are required to pay the fee assessed by E.T.S. (unless a fee waiver is granted) and to take the advanced placement examination in May.**

LATIN 1 A & B (1790A, 1790B), Grades 8-12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: None

The first-year Latin course provides the foundation for understanding Latin and the basis for learning any foreign language. Students enlarge their vocabulary, refine grammar in English, and learn about the origins of many of our traditions and institutions while reading the history, myths, and legends of the ancient Romans.

LATIN 2 A & B (1700A, 1700B), Grades 9-12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: Latin 1 A & B

Latin 2 begins with a thorough grammar review based on readings from Roman history and continues to develop the vocabulary and reading comprehension necessary to read Latin. During the second semester, readings from Julius Caesar and other celebrated authors help students learn more about their own traditions and develop reading skills and concepts applicable to Latin or any other language.

FOREIGN LANGUAGE (continued)

LATIN 3 A & B (1710A, 1710B), Grades 10-12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: Latin 2 A & B

Latin 3 is a general introduction to the politics and government of Rome. During first semester, students study the political, environmental, and economic problems of Rome in the 1st century BC through readings from Sallust and Cicero, among others. In second semester, students read selections from Ovid, Seneca, Catullus, Tacitus, Pliny, and other writers as they explore Latin literature from the 1st century AD through the Middle Ages.

ADVANCED LATIN LITERATURE A & B (1737A, 1737B), Grades 11 or 12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: Latin 3 A & B

Students will read and study a variety of prose and poetry selections from a wide range of Latin authors, excluding Vergil. Catullus, Ovid, Cicero, and Horace will be the subjects of study along with other writers of their eras. Advanced Latin Literature with its inclusion of both prose and poetry and its breadth of authors offers the student a broader preparation for college study and a deeper understanding of classical literature than Advanced Placement Latin Vergil alone. Taught alternate years with Advanced Placement Latin Vergil A & B.

ADVANCED PLACEMENT (AP) LATIN VERGIL A & B (1729A, 1729B), Grades 11 or 12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: Latin 3 A & B

Students will read selected books and individual passages from Vergil's *Aeneid* to learn about the epic tradition, the legend of the founding of Rome, and the basic precepts of literature. In addition, students will study parallel themes in Classical and English literature. **All students are required to pay the fee assessed by E.T.S. (unless a fee waiver is granted) and to take the advanced placement examination in May.** Taught alternate years with Advanced Latin Literature A & B.

FOREIGN LANGUAGE (continued)

SPANISH 1 A & B (1890A, 1890B), Grades 8-12, 1st & 2nd

Sem. One-half Credit Per Sem. *Prerequisite: None*

This introductory course is an initiation into language as a means of active communication for which a reasonable proficiency in understanding, speaking, reading, and writing Spanish is the overall goal. Frequent conversational activities, projects, and dramatizations involve students actively in the language.

SPANISH 2 A & B (1800A, 1800B), Grades 9-12, 1st & 2nd

Sem. One-half Credit Per Sem. *Prerequisite: Spanish 1 A & B*

All fundamental structures of the beginning course are reinforced during second-year study with an increased emphasis on the development of oral skills in active conversation. However, this course expands to encompass more comprehensive materials and structures so that by the end of the two-year sequence, students should be able to use effectively the four linguistic tools.

Paul Laurence Dunbar Middle School for Innovation also offers Spanish 2 for students who have successfully completed the accelerated Spanish program at Dearington Elementary School for Innovation.

SPANISH 3 A & B (1810A, 1810B), Grades 10-12, 1st & 2nd

Sem. One-half Credit Per Sem. *Prerequisite: Spanish 2 A & B*

At this level, the Spanish language is used in the classroom for conversational and instructional purposes. Emphasis is placed on increasing the scope of vocabulary, verb tenses, and grammatical structures relating to thematic units. During second semester topics of spontaneous interest and comparative cultures are increasingly emphasized.

ADVANCED SPANISH 4 A & B (1827A, 1827B), Grades 11 or

12, 1st & 2nd Sem. One-half Credit Per Sem. *Prerequisite:*

Spanish 3 A & B

Conversation and composition are stressed as students converse about daily occurrences in addition to reading and reacting to literature and historical/cultural accounts.

ADVANCED PLACEMENT (AP) SPANISH 5 A & B (1829A, 1829B), Grade 12, 1st & 2nd Sem. One-half Credit Per Sem.

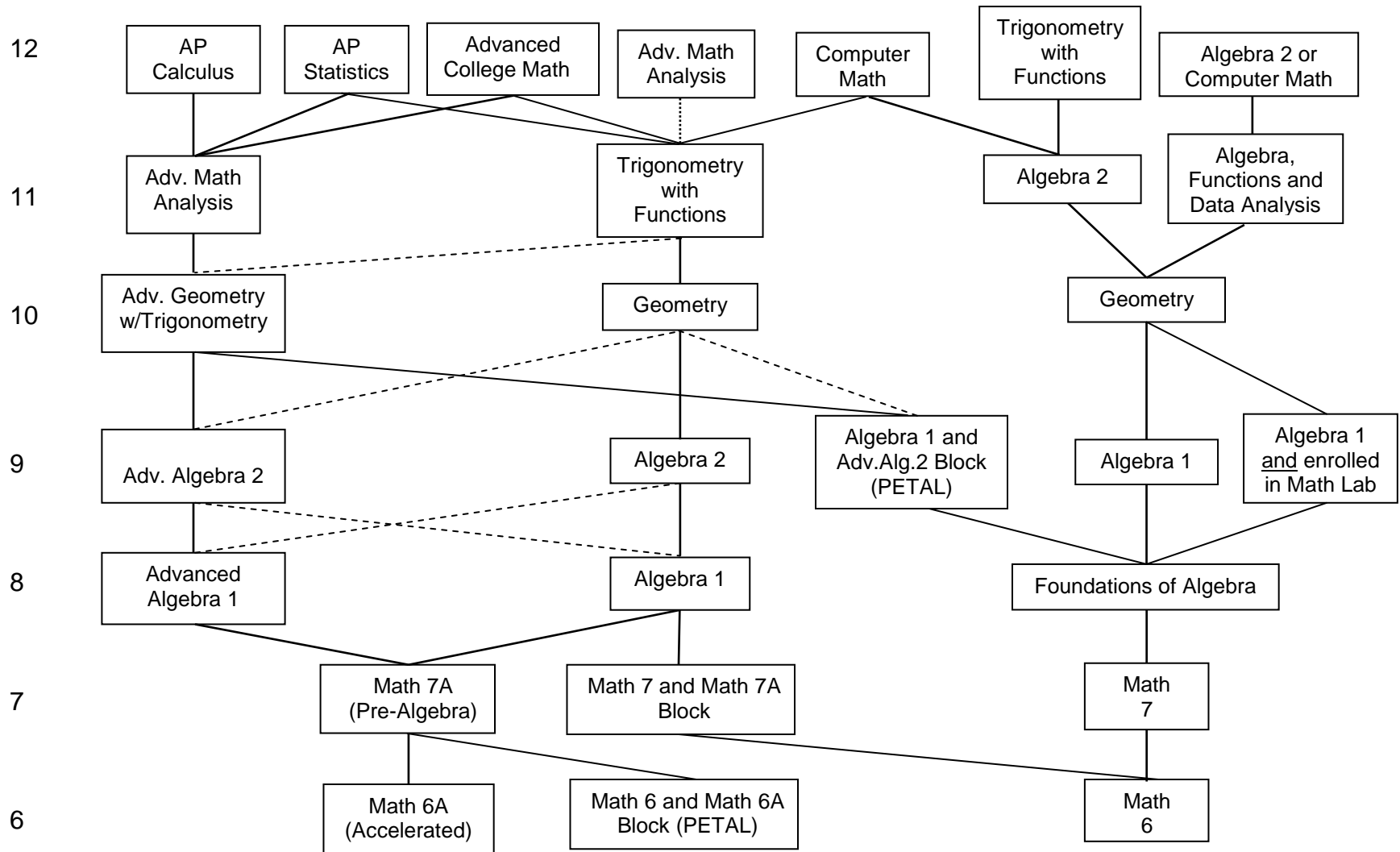
Prerequisite: Spanish 4 A & B (May be waived by recommendation of instructor)

Students will read extensively, take notes from lectures, listen to taped lectures, describe series of pictures, and refine grammatical structures. In addition, students will spontaneously initiate, respond to, and discuss themes related to literature. Throughout both semesters of the course, students will learn to develop a main idea in composition and to draw conclusions from what they see, read, or hear. **All students are required to pay the fee assessed by E.T.S. (unless a fee waiver is granted) and to take the advanced placement examination in May.**

Mathematics

Instructional Sequence Options

Classes at the Central Virginia Governor's School (CVGS) are available for students who meet the eligibility requirements and have been selected for the program. Please refer to the section on the CVGS program near the end of this document for more information.



Note: Dotted lines indicate possible, yet infrequently chosen, options

MATHEMATICS

ALGEBRA 1, PART 2 A & B (2100A, 2100B), Grade 10, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: Algebra 1, Part 1 A & B.

The third semester of this two-year sequence strengthens the connections between algebra and the other fields of math and science. Number patterns, applying equations and interpreting data will be covered. The final semester focuses on different methods of solving equations and the study of probability and statistics. **Near the end of the school year, students will take the Algebra 1 Standards of Learning test. NOTE: THIS COURSE IS ONLY AVAILABLE FOR STUDENTS WHO COMPLETED ALGEBRA 1 PART 1 PRIOR TO THE 2010-11 SCHOOL YEAR.**

ALGEBRA, FUNCTIONS, AND DATA ANALYSIS A & B (2110A, 2110B), Grades 10-12, 1st & 2nd Sem. One-half Credit per Sem. Prerequisite: Algebra 1 A & B or Algebra 1 Part 2 A & B

Students in this one year course will study functions and their behaviors, systems of inequalities, probability, data analysis and statistics, and simple experimental design. More specifically, the behavior of common function families and the connections between data tables and graphs will be used to interpret data, draw conclusions, and make predictions. In addition, students will learn to calculate basic probabilities in a real-world context and to analyze data in a normal distribution. Topics in the course will be presented with data generated from practical applications. During second semester students will design a simple survey or experiment and then collect, analyze, and present their data and conclusions.

ALGEBRA 1 A & B (2290A, 2290B), Grades 8 or 9, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: Pre-Algebra and teacher recommendation or Foundations in Algebra.

This one year algebra program includes instruction in properties and basic operations of rational numbers, their algebraic and graphical representation, linear equations, inequalities and systems of linear equations and inequalities. The second semester includes the study of polynomials, radical equations, quadratic equations with real solutions, and the concept of functions. **Near the end of the school year, students will take the Algebra 1 Standards of Learning test.**

ADVANCED ALGEBRA 1 A & B (2387A, 2387B), Grade 8, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: Pre-Algebra and teacher recommendation.

This advanced one year algebra program is only available in the 8th grade. It includes instruction in greater depth than the traditional algebra course. Students will attach meaning to the abstract concepts of algebra by using tables and graphs to interpret equations and inequalities and to analyze functions. Matrices will be used to organize and manipulate data. Calculators, computers, spreadsheets, and graphing calculators or computer graphing simulators will be used to solve problems. **Near the end of the school year, students will take the Algebra 1 Standards of Learning test.**

MATHEMATICS (continued)

ALGEBRA 2 A & B (2200A, 2200B), Grades 9-11, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: Algebra 1 A & B or Algebra 1, Part 2 A & B and teacher recommendation.

This course includes the study of real numbers and matrices, equations including rational and radical expressions, relations and systems and how they are used in mathematical modeling. The second semester of Algebra II will include the study of complex numbers, polynomials and rational functions, an introduction to statistics and probability, as well as connections with geometry, physics, chemistry, business, and consumer problems. **Near the end of the school year, students will take the Algebra 2 Standards of Learning test.**

ADVANCED ALGEBRA 2 (2397A, 2397B), Grade 9, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: Advanced Algebra 1 A & B

The first semester includes the study of equations, inequalities, relations, functions, systems of equations, matrices, polynomials, irrational numbers, complex numbers, and conic sections. The second semester of this course includes the study of higher degree polynomials, rational and exponential functions, and statistics and probability. The course ends with the study of introductory plane geometry that is needed on PSAT and SAT tests. **Near the end of the school year, students will take the Algebra 2 Standards of Learning test.**

GEOMETRY A & B (2210A, 2210B), Grades 10-12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: Algebra 1 A & B

This plane geometry course includes the study of perpendicular and parallel lines, angles and their relationships, congruent triangles and parallelograms and other polygonal regions. Also included are similar figures, the Pythagorean Theorem, circles, their tangents and secants, and three-dimensional geometry and transformational geometry. **Near the end of the school year, students will take the geometry Standards of Learning test.**

ALGEBRA 1 A & B; ADVANCED ALGEBRA 2 A & B (2290AP, 2397BP), Grade 9, 1st & 2nd Sem. One Credit Per Sem. Prerequisite: Teacher recommendation and Foundations in Algebra or Pre-Algebra

This is a two-year math program taught in one year during a two-period block. Algebra is taught first semester. Instruction includes the properties and basic operations of natural numbers, their algebraic and graphical representation, and linear equations. Also included is the study of inequalities and systems of linear equations and inequalities. **Near the end of first semester, students will take the Algebra I Standards of Learning test.** Advanced Algebra 2 is taught during the second semester. This course includes the study of equations, inequalities, relations, functions, systems of equations, matrices, polynomials, irrational numbers, complex numbers, and conic sections. The course also includes the study of higher degree polynomial functions, rational functions, exponential and logarithmic functions, statistics and probability. The course ends with the study of introductory plane geometry that is needed for PSAT and SAT tests. **Near the end of second semester students will take the Algebra 2 Standards of Learning test.**

MATHEMATICS (continued)

ADVANCED GEOMETRY WITH TRIGONOMETRY (2307A, 2307B), Grade 10, 1st & 2nd Sem. One-half Credit Per Sem.

Prerequisite: Advanced Algebra 2/Geometry A & B

The first semester of this course includes the study of polynomial regions and their areas with special emphasis on right triangles. It also includes the concepts of similarity, volume, coordinate and transformational geometry and construction of plane figures. The second semester emphasizes the study of the basic trigonometric functions, the inverse trigonometric functions, trigonometric identities, analytic trigonometry, solving triangles, analytic geometry, and the trigonometry of complex numbers. Graphing calculators will supplement the classroom portion of the course. **Near the end of the school year, students will take the geometry Standards of Learning test.**

COMPUTER MATHEMATICS A & B (2230A, 2230B), Grades 11 or 12, 1st & 2nd Sem. One-half Credit Per Sem.

Prerequisite: Algebra 1 A & B and Geometry A & B

This course is designed to combine logic, problem-solving, and computers. The main goals are to acquaint the student with the capabilities of computers and develop problem-solving skills. Students will acquire and refine skills in logic, organization, and precise expression which will enhance their learning in other disciplines. Problem-solving strategies will include defining the problem; developing and implementing a plan; and testing and revising the solution. This course can count for a mathematics credit for a Standard Technical Diploma or an Advanced Technical Diploma.

TRIGONOMETRY/FUNCTIONS A & B (2220A, 2220B), Grades 11 or 12, 1st & 2nd Sem. One-half Credit Per Sem.

Prerequisite: Algebra 2 A & B and Geometry A & B

This course includes the study of trigonometric functions, their inverses and their graphs, solving triangles, trigonometric identities, trigonometric equations, and mathematical modeling using trigonometric functions with applications. Also included is the study of matrices, sequences and series, probability and statistics, as well as an introduction to pre-calculus.

ADVANCED MATH ANALYSIS A & B (2317A, 2317B), Grades 11 or 12, 1st & 2nd Sem. One-half Credit Per Sem.

Prerequisite: Trigonometry A & B

This course includes the study of relations, functions, equations, inequalities, polynomial and rational functions, and a review and extension of trigonometry. Also included are vectors and parametric equations, polar coordinates and complex numbers, conic sections, exponential and logarithmic functions, sequences and series, probability and statistics. Optional topics include iteration, fractals and discrete mathematics graph theory. Graphing calculator techniques are stressed.

MATHEMATICS (continued)

ADVANCED PRE-CALCULUS & APPLIED CALCULUS (2328AC, 2338BC), Grade 12, Dual Enrollment Math, 1st & 2nd Sem. One-half Credit Per Sem. *Prerequisite:*

Trigonometry/Functions A & B or Math Analysis A & B

This course is a study of college algebra, matrices, and algebraic, exponential, and logarithmic functions. The course also presents the trigonometric functions, essentials of analytic geometry, and the concepts of sequences and series necessary for the study of calculus. The second semester presents limits, continuity, differentiation of algebraic and transcendental functions with applications, and an introduction to integration. **Students who have completed the course with a grade of C or better receive 6 semester hours of credit from CVCC for Math 163 and 171. Students must qualify for enrollment for this course by taking the CVCC placement test or by ACT or SAT qualifying scores. Because this course is a dual enrollment course, certain fees may apply. (see page 2 for details)**

ADVANCED PLACEMENT (AP) STATISTICS A & B (2429A, 2429B), Grade 12, 1st & 2nd Sem. One-half Credit Per Sem.

Prerequisite: Trig/Functions A & B or Math Analysis A & B

Advanced Placement statistics includes exploratory analysis of data using graphical and numerical techniques to study patterns and departures from patterns. Students will plan a study that will include identifying important variables related to the conjecture and ways to measure the variables. Students will also anticipate patterns using probability and simulation and work with concepts of statistical inference such as: confidence intervals, tests of significance, and special case of normally distributed data. **All students are required to pay the fee assessed by E.T.S. (unless a fee waiver is granted) and to take the advanced placement examination in May.**

ADVANCED PLACEMENT (AP) CALCULUS AB A & B (2329A, 2329B), Grade 12, 1st & 2nd Sem. One-half Credit Per Sem. *Prerequisite: Math Analysis A & B*

This rigorous treatment of calculus will include the study of limits, continuity, derivatives, applications of the derivative and integrals. The course will emphasize integration techniques and the calculus of transcendental functions. Extensive graphing calculator techniques will be taught. **All students are required to pay the fee assessed by E.T.S. (unless a fee waiver is granted) and to take the AP Calculus AB examination in May.** Other calculus topics, including more integration techniques, arc length and surface area as well as the calculus of parametric equations, will be taught after the Advanced Placement exam. **Note: With sufficient student and faculty interest, AP Calculus BC can be offered (2339A, 2339B). The course will be graded and weighted at 5.0.**

ADVANCED PLACEMENT (AP) CALCULUS AB/BC (2339AP, 2339BP), Grade 12, 1st & 2nd Sem. One Credit Per Sem.

Prerequisite: Math Analysis A & B

This is a double-period course. During the first semester students learn the AP Calculus AB content and that content is expanded upon and extended during the second semester. **All students are required to pay the fee assessed by E.T.S. (unless a fee waiver is granted) and to take the AP Calculus BC examination in May.**

SCIENCE

There are many alternatives in choosing a science sequence. Below you will find several examples.

3-Year Programs (Minimum Requirement)

Grade 9	Earth Science
Grade 10	Biology
Grade 11	Biology 2 or Chemistry

4 Year Programs

Grade 9	Earth Science
Grade 10	Biology
Grade 11	Biology 2 Anatomy & Physiology Biology 2 Ecology
Grade 12	Chemistry or Physics

Or

Grade 9	Earth Science
Grade 10	Biology
Grade 11	Chemistry
Grade 12	Physics

5 Year Accelerated Program

Grade 8	Advanced Earth Science
Grade 9	Advanced Biology
Grade 10	Advanced Chemistry
Grade 11	Advanced Physics
Grade 12	Advanced Placement Chemistry Advanced Placement Physics Advanced Placement Biology College Biology

*Note: Biology A and B may be taken in the 9th grade in lieu of Earth Science to provide additional options in program development. A student's program and sequence may be adapted to meet individual needs based on recommendation of guidance counselors and with the consent of the principal.

EARTH SCIENCE A & B (3290A, 3290B), Grades 9-12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: None

This laboratory science course teaches foundation skills needed for the study and understanding of all sciences. Topics include maps and landforms, meteorology, geology, oceanography, environmental studies, and astronomy. Also included is the study of the earth's composition, weathering, deposition, earthquakes, volcanoes, plate tectonics, and geologic time. **Near the end of the school year, students will take the earth science Standards of Learning test.**

ADVANCED EARTH SCIENCE A & B (3387A, 3387B), Grade 8, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: None

This advanced earth science course is available only in the 8th grade. It includes instruction in greater depth than the traditional earth science course, and it requires students to demonstrate a higher level of mastery of the knowledge, skills, and processes contained in the earth science Standards of Learning (SOL). In addition, since instruction moves at a faster pace, additional topics and supplemental activities supporting the earth science SOL are included in the course. **Near the end of the school year, students will take the earth science Standards of Learning test.**

SCIENCE (continued)

BIOLOGY 1 A & B (3200A, 3200B), Grades 9-12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: None- It is preferable that students have completed Earth Science A & B.

This course includes the study of scientific processes and problem solving, ecology, biochemistry, and cytology (structure, function and reproduction of cells). Also included are human endocrinology, reproduction, genetics, evolution, behavior and taxonomy (classification). **Near the end of the school year, students will take the biology Standards of Learning test.**

ADVANCED BIOLOGY 1 A & B (3397A, 3397B), Grades 9 & 10, 1st & 2nd Sem., One-half Credit Per Sem. Prerequisite: It is preferable that students have completed Earth Science A & B.

The course content closely parallels that described in Biology A and B. A more quantitative approach may be utilized in dealing with specific problem areas, with additional emphasis placed on the underlying chemical principles for the biological sciences. Students will have an opportunity to conduct original research. **Near the end of the school year, students will take the biology Standards of Learning test.**

BIOLOGY 2 ANATOMY AND PHYSIOLOGY A & B (3210A, 3210B), Grades 10-12, 1st & 2nd Sem. One-half Credit Per Sem. Prerequisite: Biology 1 A & B

This year-long course follows Biology 1 and is a study of human anatomy and physiology.

BIOLOGY 2 ECOLOGY A & B (3211A, 3211B), Grades 10-12, 1st & 2nd Sem., One-half Credit Per Sem. Prerequisite: Biology 1 A & B

This year-long course follows Biology 1 and is a study of the environment and man's impact on it.

CHEMISTRY A & B (3220A, 3220B), Grades 10-12, 1st & 2nd Sem., One-half Credit Per Sem. Prerequisite: Biology A & B and Algebra 1 A & B

This course provides an introduction to basic chemical principles and their application. Topics include atomic structure, the periodic table, bonding, chemical equations and reactions, stoichiometry, states of matter, and thermochemistry. A solid knowledge of algebra is necessary for the calculations in this class. **Near the end of the school year, students will take the chemistry Standards of Learning test.**

ADVANCED CHEMISTRY A & B (3307A, 3307B), Grade 10-12, 1st & 2nd Sem., One-half Credit Per Sem. Prerequisite: Biology A & B and Algebra 1 A & B, Algebra 2 A & B (typically students have previously taken advanced level science and math courses)

The course content is closely aligned with that of general Chemistry. However, a more rigorous quantitative approach requires students to investigate, analyze, and summarize chemical reactions, molecular behaviors, and uses of substances. Hands-on experiments with high level math and thinking skills are included. Students will have an opportunity to conduct original research. **Near the end of the school year, students will take the chemistry Standards of Learning test.**

SCIENCE (continued)

ADVANCED PHYSICS A & B (3317A, 3317B), Grades 11 or 12, 1st & 2nd Sem., One-half Credit Per Sem. *Prerequisite:*

Algebra 2 and Geometry; Trigonometry/Functions

This course deals with mechanics, motion and waves with emphasis on problem solving and the use of a computer. Also included is the study of light, electricity, magnetism, the atom and nuclear forces. Students will have an opportunity to conduct original research.

ADVANCED PLACEMENT (AP) CHEMISTRY A & B (3459A, 3459B), Grades 11 or 12, 1st & 2nd Sem. One-half Credit per Sem. *Prerequisite: Biology A & B; Chemistry A & B*

This course is the equivalent of a first-year college general chemistry course. Topics include the structure of matter, kinetic theory of gases, chemical equilibria, chemical kinetics and the basic concepts of thermodynamics. Students will spend considerable time in individual study and in laboratory work. **All students are required to pay the fee assessed by E.T.S. (unless a fee waiver is granted) and to take the advanced placement examination in May.**

ADVANCED PLACEMENT (AP) PHYSICS A & B (3469A, 3469B), Grade 12, 1st & 2nd Sem., One-half Credit per Sem.

Prerequisite: Physics A & B and Math Analysis A & B

To be successful in this rigorous college-level course, students must be able to work both independently and collaboratively in the classroom and laboratory. Among the topics studied in this course are mechanics, dynamics, kinematics, nuclear physics, and the properties of matter, light, and electricity. **All students are required to pay the fee assessed by E.T.S. (unless a fee waiver is granted) and to take the advanced placement examination in May.**

ADVANCED COLLEGE BIOLOGY A & B (3328AC, 3328BC), Dual Enrollment, Grade 12, 1st & 2nd Sem. One-half Credit per Sem. *Prerequisites: Biology A & B, Chemistry A & B; Geometry A & B*

This college level course deals with the fundamental characteristics of living matter from the molecular level to the ecological community with emphasis on general biological principles. Topics to be addressed include the organization and biochemical functions of cells, genetics, animal and plant physiology, continuity of life and ecological relationships. Appropriate applications of technology will allow for in-depth exploration of selected topics and opportunities for independent student research. Students will be expected to attend, in addition to the five class periods a week scheduled for "regular" class, two additional periods to meet the required lecture and laboratory time to receive college credit. **Students who have completed the course with a grade of C or better receive 8 semester hours of credit from CVCC for Biology 101 and 102. Students must qualify for enrollment for this course by taking the CVCC placement test or by ACT or SAT qualifying scores. Because this course is a dual enrollment course, certain fees may apply. (see page 2 for details) Maximum number of students per class 23.**

SCIENCE (continued)

ADVANCED PLACEMENT (AP) BIOLOGY A & B (3449A, 3449B), Grades 11 or 12, 1st & 2nd Sem., One-half Credit per Sem. *Prerequisites: Biology A & B, Chemistry A & B; Geometry A & B*

This course is the equivalent of a first-year college general biology course. It includes the study of the structure and biochemical functions of cells and cellular components, animal and plant physiology, principles of genetics, and the interdependence of organisms in ecosystems. Students will spend considerable time in unsupervised individual study and in laboratory work. **All students are required to pay the fee assessed by E.T.S. (unless a fee waiver is granted) and to take the advanced placement examination in May.**

COMPUTER SCIENCE

COMPUTER APPLICATIONS A & B (3740A, 3740B), Grades 9-12, 1st & 2nd Sem. One-half Credit per Sem. *Prerequisite:*

None. Keyboarding skills and Algebra 1 A & B recommended.

This course is designed to develop skills and provide experience with the major applications of the microcomputer. These applications include word processing (using both text and graphics-based programs), spreadsheet, database, and integration of applications. Students will use these applications for problem solving and file and disk management. Keyboarding and general computer understanding will be addressed as needed. Also included is work with multi-media research, the Internet, presentations, desktop-publishing, video conferencing and digital cameras, computer graphics, computer communications, the use of technology for problem solving, and the integration of applications.

COMPUTER PROGRAMMING 1 A & B (3750A, 3750B), Grades 9-12, 1st & 2nd Sem. One-half Credit per Sem.

Prerequisite: Algebra 1 A & B, Computer Applications A & B, or teacher recommendation

This course is for computer science students and will provide an overview of several computer languages, including **BASIC, LOGO, Visual, and Pascal.** Emphasis will be placed on programming structure and problem solving.

COMPUTER PROGRAMMING 2 A & B VISUAL (3760A, 3760B), Grades 11 or 12, 1st & 2nd Sem. One-half Credit per Sem. *Prerequisite: Computer Programming 1 A & B, Algebra 2 A & B, or teacher recommendation*

This course is comparable to the first semester of a college course in **Visual** Programming. The major emphasis is on program methodology and problem solving using **Visual Basic** and **Visual C++.**

SOCIAL STUDIES

SOCIAL STUDIES (continued)

Some Alternatives in Choosing a Social Studies Sequence

A - The following courses are recommended for students seeking the standard high school diploma (3 social studies credits).

- Grade 9 or 10: World Geography A & B or World History & Geography 1 (to 1500 AD) A & B
- Grade 11: American History A & B
- Grade 12: United States Government A & B

Note: Students taking World History & Geography 1 (to 1500 AD) as 9th graders may also elect to take World History & Geography 2 (1500 AD to Present) as 10th graders.

B - The following advanced-level courses are recommended for students seeking the advanced studies diploma (4 social studies credits).

- Grade 9: Advanced World History & Geography 1 (to 1500 AD) A & B
- Grade 10: Advanced World History & Geography 2 (1500 AD to Present) A & B
- Grade 11: Advanced American History A & B
- Grade 12: Advanced U.S. Government A & B

Note: The four credits for an advanced diploma may also be earned by taking the courses listed under sequence A, plus World History & Geography 1500 AD to Present in 10th grade.

C - Students seeking the Advanced Studies Diploma with Lynchburg Honors Seal (4 social studies credits) must meet the following social studies requirements:

- Grade 9: Advanced World History & Geography 1 (to 1500 AD) A & B
- Grade 10: Advanced World History & Geography 2 (1500 AD to Present) A & B or Advanced Placement (AP) World History
- Grade 11: Advanced American History A & B or Advanced Placement (AP) American History
- Grade 12: Advanced U.S. Government or Advanced Placement (AP) American Government Politics & Comparative Government Politics

Note: There are no prerequisites for any of the social studies courses.

WORLD GEOGRAPHY A & B (4690A, 4690B), Grade 9, 1st & 2nd Sem. One-half Credit per Sem.

The focus of these classes is the study of the world's peoples, places, and environments, with an emphasis on world regions. This course is designed primarily for students seeking the standard high school diploma. **Near the end of the school year, the students will take the Virginia World Geography Standards of Learning test.**

WORLD HISTORY & GEOGRAPHY 1 (to 1500 AD) A & B (4290A, 4290B), Grade 9, 1st & 2nd Sem. One-half Credit per Sem.

These classes cover the historical development of people, places, and patterns of life from early times until about 1500 AD. Geography is emphasized in the study of each civilization. These classes are designed primarily for students seeking the standard high school diploma. **Near the end of the school year, students will take the World History and Geography 1 Standards of Learning test.**

ADVANCED WORLD HISTORY & GEOGRAPHY 1 (to 1500 AD) A & B (4397A, 4397B), Grade 9, 1st & 2nd Sem. One-half Credit per Sem.

These classes cover the historical development of people, places, and patterns of life from early times until about 1500 AD. Geographic influences on history are emphasized in the study of each civilization. In these advanced-level classes students must complete in-depth projects and writing assignments, as well as additional reading assignments and research. **Near the end of the school year, students will take the World History and Geography 1 Standards of Learning test.**

WORLD HISTORY & GEOGRAPHY 2 (1500 AD to PRESENT) A & B (4200A, 4200B), Grade 9 or 10, 1st & 2nd Sem. One-half Credit per Sem.

These classes cover history and geography from the late Middle Ages to the present. Other points of focus are the political boundaries that developed with the evolution of nation-states; the ways in which scientific and technological revolutions produced economic, social and political change; and the people and events of the 19th and 20th centuries as they relate to contemporary issues. **Near the end of the school year, students will take the World History and Geography 2 Standards of Learning test.**

ADVANCED WORLD HISTORY & GEOGRAPHY 2 (1500 AD to PRESENT) A & B (4307A, 4307B), Grade 10, 1st & 2nd Sem. One-half Credit Per Sem.

These classes cover history and geography from the late Middle Ages to the present. Other points of focus are the political boundaries that developed with the evolution of nation-states; the ways in which scientific and technological revolutions produced economic, social and political change; and the people and events of the 19th and 20th centuries as they relate to contemporary issues. Projects, writing assignments, additional reading assignments, and research are requirements of these classes. **Near the end of the school year, students will take the World History and Geography 2 Standards of Learning test.**

ADVANCED PLACEMENT (AP) WORLD HISTORY A & B (4469A, 4469B), Grades 10-12, 1st & 2nd Sem. One-half Credit Per Sem.

This course is designed for students with a keen interest in history and a desire to earn college credit in high school. Requiring extensive independent reading and writing assignments, this course has as its chronological frame the period from approximately 8000 B.C.E. to the present. Course work focuses on continuity and change across historical periods as students analyze the processes and causes involved in these continuities and changes. Included in the course are the major civilizations in Africa, the Americas, Asia, and Europe. **All students are required to pay the fee assessed by E.T.S. (unless a fee waiver is granted) and to take the advanced placement examination in May.** *Note: These classes may be taken at the 10th grade level for social studies credit in lieu of Advanced World History & Geography 2 (1500 AD to Present). Tenth grade students choosing this option will take the World History and Geography 2 Standards of Learning test near the end of the school year. Eleventh and 12th grade students may take the class for elective credit.*

SOCIAL STUDIES (continued)

AMERICAN HISTORY A & B (4210A, 4210B), Grade 11, 1st & 2nd Sem. One-half Credit Per Sem.

These classes are a chronological study of American history from the Age of Discovery to the present. Although emphasis is placed on political and economic history, content also includes the major issues, movements, people, and events that shaped American culture. **Near the end of the school year, students will take the Virginia/U.S. History Standards of Learning test.**

ADVANCED AMERICAN HISTORY A & B (4317A, 4317B), Grade 11, 1st & 2nd Sem. One-half Credit Per Sem.

These advanced-level classes provide a comprehensive, in-depth study of American history from the Age of Discovery to the present. Although emphasis is placed on political and economic history, content also includes the major issues, movements, people, and events that shaped American culture. Independent reading and writing assignments, as well as individual research projects, are required. **Near the end of the school year, students will take the Virginia/U.S. History Standards of Learning test.**

ADVANCED PLACEMENT (AP) AMERICAN HISTORY (4419A, 4419B), Grade 11, 1st & 2nd Sem. One-half Credit Per Sem.

These classes are geared to the student who has a keen interest in history and who wishes to receive college credit while in high school. During 1st semester, emphasis is on the American Revolution, the Jacksonian period, the Civil War, Reconstruction, and the Gilded Age. Second semester focuses on the politics of the Gilded Age, the Populist-Progressive era, World War I, the Depression and the New Deal, World War II, and domestic and foreign policy from Post World War II to the 1980s. Course requirements include basic text and supplementary readings, class lectures and discussions, and writing assignments (including open-ended and document-based questions). **All students are required to pay the fee assessed by E.T.S. (unless a fee waiver is granted) and to take the advanced placement examination in May. In addition, near the end of the school year, students will take the Virginia/U.S. History Standards of Learning test.**

UNITED STATES GOVERNMENT A & B (4220A, 4220B), Grade 12, 1st & 2nd Sem. One-half Credit Per Sem.

These classes provide students with an understanding of the American and Virginia political systems. Included in this study are the United States and Virginia Constitutions; the structure and operation of the legislative, executive, and judicial departments of the U.S. and Virginia governments; the process of policy-making in economics, foreign affairs, and civil rights issues; and the influence of the public, interest groups, political parties, and the media on decision-making. Other points of focus are a comparison of the U.S. political and economic systems to those of other nations and the role of the government in the economy. In addition, special emphasis is given to a unit on individual voting behavior, incorporating current elections.

SOCIAL STUDIES (continued)

ADVANCED UNITED STATES GOVERNMENT A & B (4327A, 4327B), Grade 12, 1st & 2nd Sem. One-half Credit Per Sem.

This advanced-level government course focuses on the theory and practice of leadership and political behavior from the social scientist point of view as students study topics such as theories of government, federalism, state and local government, and decision-making at the national level. Additional units of study include the American Free Enterprise System, the law and society, and the involvement of the United States in foreign affairs. As in all advanced-level classes, students must be prepared to complete independent reading, writing, and research assignments.

ADVANCED PLACEMENT (AP) AMERICAN GOVERNMENT POLITICS & COMPARATIVE GOVERNMENT POLITICS (4429A, 4429B), Grade 12, 1st & 2nd Sem. One-half Credit Per Sem.

These classes are geared to those students with a keen interest in government and the desire to earn college credit in high school. First semester gives students a critical perspective on politics and government in the United States, involving both the study of general concepts to interpret American politics and the analysis of specific case studies. In 2nd semester, students gain knowledge of the world's diverse political structures and practices as they study five specific countries and compare their key political relationships. Both 1st and 2nd semester classes require student research and analysis. **All students are required to pay both testing fees assessed by E.T.S. (unless a fee waiver is granted) and to take both advanced placement examinations in May.**

ADVANCED PLACEMENT (AP) EUROPEAN HISTORY A & B (4409A, 4409B), Grades 11-12, 1st & 2nd Sem. One-half Credit Per Sem.

These elective classes are designed for students with a keen interest in history and a desire to earn college credit in high school. Requiring extensive independent reading and writing assignments, course work includes an in-depth study during 1st semester of the major events and trends in Europe from approximately 1450 to the Napoleonic Period with significant emphasis placed on intellectual, cultural, and social-economic history. Study 2nd semester continues from the Napoleonic Period to the present. **All students are required to pay the fee assessed by E.T.S. (unless a fee waiver is granted) and to take the advanced placement examination in May.**

AFRICAN-AMERICAN HISTORY (4740A, 4740B), Grades 9-12, 1st or 2nd Sem. One-half Credit.

This elective course stresses the contributions and roles of Black Americans from their African heritage to modern-day America.

HEALTH

DRIVER EDUCATION AND PERSONAL HEALTH & SOCIAL DEVELOPMENT (5240A, 5240B) Grades 9-12, 1st or 2nd Sem., One-half Credit. Prerequisite: None

The Driver Education portion will provide the in-class preparation for behind-the-wheel driver training. Personal health and social development fulfills the family life education requirement for grade ten.

HEALTH AND FAMILY LIVING (5250A, 5250B), Grades 9-12 1st or 2nd Sem., One-half Credit. Prerequisite: None

This course fulfills the family life education requirement for students in grade nine. The course includes instruction in disease prevention, first-aid techniques, human growth and development, personal health and wellness, substance abuse, consumer health, and topics related to family living. Attitudes, morality and responsible decision making are discussed in relation to developing a healthy and productive lifestyle from adolescence to old age.

PHYSICAL EDUCATION

The Physical Education Program offers a variety of courses designed to meet individual needs and interests; however, the underlying purpose in all courses is to promote the concept of fitness and wellness for life. All courses will include aerobic exercises and strength training in addition to skills development in the specified sports and/or recreational activities. Two semesters of physical education are required for graduation. These courses may be taken repeatedly for elective credit.

PHYSICAL EDUCATION 1 (5110A, 5110B), Grades 9-12, 1st or 2nd Sem., One-half Credit. Prerequisite: None

This course is designed to develop skills in floor or field hockey, speedball, aerobics and/or dance.

PHYSICAL EDUCATION 2 (5120A, 5120B), Grades 9-12, 1st or 2nd Sem., One-half Credit. Prerequisite: None

This course is designed to develop skills in flag football, soccer, basketball and volleyball.

PHYSICAL EDUCATION 3 (5130A, 5130B), Grades 9-12, 1st or 2nd Sem., One-half Credit. Prerequisite: None

This course is designed to develop skills in track and field, tennis, basketball, and volleyball.

PHYSICAL EDUCATION 4 (5140A, 5140B), Grades 9-12, 1st or 2nd Sem., One-half Credit. Prerequisite: Enrollment in ROTC 1 or completion of ROTC 1.

This course is designed to develop knowledge and skills related to flexibility, strength training, personal fitness, and drill activities.

PHYSICAL EDUCATION 5 (5150A, 5150B), Grades 9-12, 1st or 2nd Sem., One-half Credit. Prerequisite: None

This course fulfills the needs of handicapped students or students with medical disabilities. Activities vary depending upon each student's needs and abilities.

PHYSICAL EDUCATION (continued)

PHYSICAL EDUCATION 6 (5160A, 5160B), Grades 9-12, 1st or 2nd Sem., One-half Credit. Prerequisite: None

This course develops knowledge and skills related to weight training, aerobic exercise, movement principles, and personal fitness.

PHYSICAL EDUCATION 9 (5190B), Grades 9-12, 2nd Sem., One-half Credit. Prerequisite: None

This course is designed to develop intermediate and advanced skills in activities selected from among the following: floor or field hockey, lacrosse, softball, volleyball and basketball.

PHYSICAL EDUCATION 10 (5191A), Grades 9-12, 1st Sem., One-half Credit. Prerequisite: None

This course is designed to develop intermediate and advanced skills in activities selected from among the following: flag football, soccer, basketball, tennis, and track and field.

ATHLETIC TRAINING

ATHLETIC TRAINING 1 A & B (5260A, 5260B), Grades 9-12, 1st & 2nd Sem., One-half Credit Per Sem. Prerequisite:

Interest in athletic training and permission of the instructor.

Students interested in athletic training as a career, physical therapy, or medicine should consider these courses. Sports medicine will be covered from three aspects: recognition of injuries; prevention of injuries; and rehabilitation of injuries. Some lab work with athletic teams may be required.

ATHLETIC TRAINING 2 A & B (5261A, 5261B), Grades 9-12, 1st & 2nd Sem., One-half Credit Per Sem. Prerequisite:

Athletic Training 1 (5260A and 5260B) and permission of the instructor.

Students continue their study of sports medicine topics from three aspects: recognition of injuries; prevention of injuries; and rehabilitation of injuries. Some lab work with athletic teams may be required.

CAREER-TECHNICAL EDUCATION

Career-Technical Education is an essential part of the school division's total educational program specifically designed to prepare students for gainful employment and/or post-secondary education or training.

Career and Technical Education provides sequences of career-related courses designed to help students develop skills needed for entry-level employment, advanced technical training programs, and continuing education on the college and university level.

Elective courses in each program area focus on helping students develop twenty-first century job skills, such as, proficiency in computer technology, information acquisition and processing, problem solving, teamwork, and effective communication skills.

Career and Technical Education courses are designed to enhance and support the academic curriculum - reinforcing the Standards of Learning established for English, mathematics, science, and history & social science.

ARCHITECTURE & CONSTRUCTION

Courses in this area can prepare students for careers in designing, planning, managing, building and maintaining the built environment.

ARCHITECTURAL DRAWING A & B (6760A, 6760B), Grades 10-12, 1st & 2nd Sem., One-half Credit per Sem.

Prerequisite: Basic Technical Drawing (6740 A & B)

This upper-level course begins with the basics of residential design and progresses through an entire set of house plans. The students will learn architectural CAD software, as a tool for creating professional, three-dimensional architectural designs and drawings. The students will design and build model displays as projects. The students will also be given the opportunity to compete in regional and state competitions in architectural design and modeling.

INTRODUCTION TO BUILDING TRADES A & B (8241A, 8241B), Grade 10, Heritage High, 1st or 2nd Sem., One-half Credit. Prerequisite: None

Students will be introduced to four general areas of study including carpentry, electrical wiring, plumbing, and masonry in this course. Students will design, build, and test scale model structures and work with projects that help them to understand the jobs of architects, carpenters, electricians, plumbers, surveyors, contractors, masons, design engineers, and a variety of other construction careers. *Maximum number of students per class 20.*

BUILDING TRADES 1 A & B (8240A, 8240B), Grade 11, Heritage High, 1st & 2nd Sem., One Credit per Sem.

Prerequisite: Approved Application

This is a double-period course. This course is designed to prepare individuals to erect, install, maintain and repair buildings and other structures. Carpentry, masonry, electricity, plumbing and painting skills will be emphasized. Also included is instruction in cost estimating, cutting, fastening, and fitting various materials, using hand and power tools and following technical specifications and blueprints. *Maximum number of students per class 20.*

ARCHITECTURE & CONSTRUCTION (cont.)

BUILDING TRADES 2 A & B (8250A, 8250B) Grade 12, Heritage High, 1st & 2nd Sem., One Credit per Sem.,

Prerequisite: Building Trades 1 (8240 A & B)

This is a double-period course. Course content includes construction, customer relations, job pricing, custom construction, installing interior millwork. Building Codes will be stressed in carpentry, painting, electrical, plumbing and masonry. The course also includes special emphasis on job opportunities, project management, and job integrity in the construction trades. *Maximum number of students per class 20. This course may be taken as a dual-enrollment course earning 6 college credits from Central Virginia Community College under the course numbers 8258AC, 8258BC (CVCC course numbers are BLD 149 (3 credits) and BLD 249 (3 credits).*

ARTS, AV TECHNOLOGY & COMMUNICATIONS

Courses in this area can prepare students for careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.

COMMUNICATION SYSTEMS A & B (8561A, 8561B) Grades 10-12, Heritage High, 1st or 2nd Sem. One-half Credit.

Prerequisite: None

This is an introduction class for students preparing for jobs as advertising artists, and illustrators. Students learn both hand and computer generated layout and illustration used for brochures, posters, catalogues, advertisements and logos. Students learn skills in the areas of advertising design, illustration, printing advertisements, digital photography, and digital imaging

VIDEO AND MEDIA TECHNOLOGY (7450A & 7450B) Grades 10-12, Heritage High, 1st & 2nd Sem., One-half Credit.

Prerequisite: None

This course offers students an opportunity to study all aspects of video and media production, from planning and writing for production to operating studio and editing equipment. Students practice various methods of gathering news and information from individuals, research, and online resources. In addition, students are introduced to analog and digital principles of film production.

BUSINESS, MANAGEMENT, ADMINISTRATION & FINANCE

Courses in this area can prepare students for careers in Business Management and Administration and Finance, careers that encompass planning, organizing, directing and evaluating business functions essential to efficient and productive business operations. Business Management and Administration and Finance career opportunities are available in every sector of the economy.

ACCOUNTING 1 A & B (6160A & 6160B), Grades 10-12, 1st & 2nd Sem., One-half Credit per Sem. Prerequisite: None

Content includes theory of basic bookkeeping, use of journals and ledgers, worksheets, and income statements. Also included is the preparation of financial records, taxes and payroll projects; special problems related to sales and purchases. Students learn fundamental accounting procedures using a manual system.

BUSINESS, MANAGEMENT, ADMINISTRATION & FINANCE (cont.)

ACCOUNTING 2 A & B (6170A& 6170B), Grades 11 or 12, 1st & 2nd Sem., One-half Credit per Sem. Prerequisite:
Accounting 1(6160 A & B) and Keyboarding (6240)

Content includes management of financial records through various business activities, partnership accounting, and general ledger. Students use manual accounting skills to analyze and interpret accounting transactions. Also included is the study of corporate and cost accounting and budgetary controls.

BUSINESS MANAGEMENT (6140A) Grades 11 or 12, 1st Sem., One-half Credit. Prerequisite: None

This one-semester course includes an overview of American business and the social and economic environments in which it operates. Main topics of study are economics, business finance, and personnel administration. Members of the class start and operate a corporation through Junior Achievement.

BUSINESS LAW (6150B) Grades 11 or 12, 2nd Sem., One-half Credit. Prerequisite: None

This course is focused on personal law, the law of contracts and the rights and responsibilities of individuals in our society. Laws affecting daily business contacts and employment are emphasized.

COMPUTER INFORMATION SYSTEMS A & B (6340A, 6340B) Grades 11 or 12, Heritage High, 1st & 2nd Sem., One-half Credit per Sem. Prerequisite: Keyboarding (6240)

This course develops skills and provides experience with the major business applications of the microcomputer. These include Microsoft Windows and word processing using Microsoft Office. Also included are business computer terminology, systems and procedures, spreadsheets, database management, desktop publishing, and presentation graphics using Microsoft Office. Students will attempt the Internet and Computing Core Certification (IC3) exam. The IC3 exam is offered through Certiport.

DESIGN, MULTIMEDIA, & WEB TECHNOLOGIES (6260A, 6260B), Grades 9-12, 1st or 2nd Sem., One-half Credit

Prerequisite: Keyboarding (6240) or equivalent skills

Students develop proficiency in creating desktop publications, multimedia presentations/ projects, and Web sites using industry standard application software. Students incorporate principles of layout and design in completing publications and projects. Students design portfolios that may include business cards, newsletters, mini-pages, Web pages, multimedia presentations and projects, calendars, and graphics. Completion of this course may prepare students for industry certifications

KEYBOARDING (6240A, 6240B) Grades 9-12, 1st or 2nd Sem., One-half Credit. Prerequisite: None

Students develop and enhance touch skills for entering alphabetic, numeric, and symbol information on a keyboard. Students compose and produce a variety of personal, educational, and professional documents.

BUSINESS, MANAGEMENT, ADMINISTRATION & FINANCE (cont.)

KEYBOARDING APPLICATIONS (6250A, 6250B), Grades 9-12, 1st or 2nd Sem., One-half Credit. Prerequisite: Keyboarding (6240) or mastery of touch typing

Students enhance touch skills for entering alphabetic, numeric, and symbol information on a keyboard. Students compose and produce a variety of personal, educational, and professional documents.

PRINCIPLES OF BUSINESS AND MARKETING A & B (6370A, 6370B), Heritage High, Grades 9-12, 1st or 2nd Sem., One-half Credit. Prerequisite: None

Students explore the role of business and marketing in the free enterprise system and the global economy. They study how the American economy operates as they prepare to make decisions as consumers, wage earners, and citizens.

EDUCATION & TRAINING

Courses in this area can prepare students for careers in planning, managing and providing education and training services or related learning support services.

INTRODUCTION TO EARLY CHILDHOOD EDUCATION (6540B), Grade 9-10, 2nd Sem., One-half Credit. Prerequisite: None

This course presents all aspects of growth and development of children from birth to 5 years. The responsibilities of childcare and parenting are discussed, and emphasis is placed on the importance of a nurturing relationship between parents, adults and children. This course helps students understand their own development, to recognize the importance of a healthy family unit in today's society, and to gain familiarity with several career pathways within the child development area. *Maximum number of students per class 20.*

EARLY CHILDHOOD EDUCATION 1 (6541A & 6541B) Grade 11, Heritage High, 1st & 2nd Sem., One Credit per Sem. Prerequisite: Approved Application

This is a double-period course. Students prepare to be primary providers of home-, family-, or institution-based child care services by focusing their study on the planning, organizing, and conducting of meaningful play and learning activities; child monitoring and supervision; record keeping; and referral procedures. Teachers highlight the basic skills of math, science, and communication when appropriate. *Maximum number of students per class 20.*

EDUCATION & TRAINING (continued)

EARLY CHILDHOOD EDUCATION 2 (6542A, 6542B), Grade 12, Heritage High, 1st & 2nd Sem., One Credit per Sem. Prerequisite: Early Childhood Education 1 (6541A & 6541B)

This is a double-period course. Students prepare for positions in child care centers as child care attendants, kindergarten aides, or child care assistants; as foster parents; or as entrepreneurs. Opportunities for mentorship under the supervision of the instructor will be a part of the class curriculum. Teachers highlight the basic skills of math, science, and communication when appropriate in the content. Completion of this sequence may prepare students for the Child Development Associate (CDA) National Credential by the Council for Professional Recognition. *Maximum number of students per class 20.*

This course may be taken as a dual-enrollment course for 6 college credits from Central Virginia Community College under numbers 6548AC, 6548BC. CVCC course numbers CHD 120 (3 credits) and CHD 165 (3 credits).

TEACHERS FOR TOMORROW (6550A, 6550B), Grades 11 & 12, 1st & 2nd Sem., One-half Credit per Sem. Prerequisite: Approved Application

Virginia's Teachers for Tomorrow Program is offered to high school juniors and seniors interested in pursuing a career in teaching and education. Students will experience the profession as they are guided through the history of education and the functions of schools and school divisions. Additionally, the students will experience the classroom as they become acquainted with teachers and teaching on a personal and professional level, including a brief internship in a classroom setting. **This course may be taken as a dual-enrollment course earning 4 college credits from Lynchburg College under course numbers 6558AC and 6558BC. The LC course numbers are EDUC 101 (3 credits) and EDUC 202 (1 credit).**

HEALTH SCIENCE

Courses in this area can prepare students for careers in planning, managing, and providing therapeutic services, diagnostic services, health information science, support services, and biotechnology research and development.

HEALTH AND MEDICAL SCIENCES EXPLORATORY (6840A, 6840B), Grades 10-12, E. C. Glass High, 1st or 2nd Sem., One-half Credit. Prerequisite: None

This is an exploratory course which is recommended as a prerequisite to Dental Careers. Students will focus on careers in the health field by exploring their own interest, values, and abilities. They will learn basic first-aid skills and develop an understanding of the characteristics and make-up of a variety of health careers. Students will gain knowledge necessary to make an informed career choice.

DENTAL CAREERS 1 A & B (6810A, 6810B) Grade 11, E. C. Glass High, 1st & 2nd Sem., One Credit per Sem. Prerequisite: Approved application (Health and Medical Sciences Exploratory (6840) is recommended)

This is a double-period course. This is a double period health occupational preparatory course. Students learn dental anatomy, care and sterilization of instruments, and basic oral hygiene skills. Topics include: clinical skills necessary to assist the dentist in the routine function of a dental office, chair-side dental procedures, instrument set-up, and basic laboratory procedures including material manipulation. *Maximum number of students per class 20.*

HEALTH SCIENCE (continued)

DENTAL CAREERS 2 A & B (6820A, 6820B) Grade 12, E. C. Glass High, 1st & 2nd Sem., One Credit per Sem. Prerequisite: Dental Careers 1 (6810 A & 6810B)

This is a double-period course. Students continue developing their skills and mastering competencies through classroom instruction and simulated clinical experiences. Topics include: taking and processing dental x-rays, laboratory procedures, and identification of instruments and material manipulation. Students receive Dental Radiation Safety and Hygiene certification upon satisfactory completion of the unit test. The final part of the Dental Careers program combines classroom instruction with actual hands-on training with area dentist, assistants, hygienist, and laboratory technicians. The clinical training will take place during the regular school hours and will be graded but not necessarily for pay. Classroom instruction will include entry level clerical skills as well as clinical skills. *Maximum number of students per class 20.*

MEDICAL ASSISTANT 1 A & B (8711A, 8711B), Grade 11 & 12, E. C. Glass High, 1st & 2nd Semester, One-half Credit per Sem. Prerequisite: Approved Application; Health and Medical Sciences Exploratory (6840) is recommended.

This is a double-period course. Students develop basic skills and techniques to assist the physician and/or other medical professionals in patient examinations, basic emergency care, simple laboratory tests, and administrative duties and will gain foundation knowledge in basic anatomy and physiology, medical ethics and legal responsibilities. Students also explore medical assisting career pathways. On-the-job clinical instruction and/or observation may occur in a health care facility and is coordinated by the teacher. **This class will meet on Tuesday and Thursday each week during 6th and 7th periods.**

MEDICAL ASSISTANT 2 A & B, (8712A, 8712B), Grade 12, E.C. Glass High, 1st and 2nd Semester, One-half Credit per Sem. Prerequisite: Medical Assistant 1 (8711A & 8711B)

This is a double-period course. Students further develop medical-assisting skills and techniques learned in Medical Assistant I. They also learn management of patient records, cardiopulmonary resuscitation, care and use of equipment, collection and analysis of laboratory specimens, special diagnostic testing, basic diseases and disorders, basic knowledge of treatment and medication, and job preparedness skills. Advanced on-the-job clinical experience in a health care facility is a part of the course. Successful completion of the program leads to employment in physicians' offices or clinics. This course may assist the student in preparing for the NRDA Certification-Medical Assisting (National Allied Health Registry, National Association for Health Professionals). **This class will meet on Monday and Wednesday each week during 6th and 7th periods. Students will also complete a minimum of 2 hours on-the-job clinical experience each week.**

HEALTH SCIENCE (continued)

EMERGENCY MEDICAL TECHNICIAN BASIC A & B (8720A, 8720B), Grade 12, 1st and 2nd Sem., One-half Credit per Sem. Offered at EC Glass or Heritage High *Prerequisite:*

Approved Application

The Emergency Medical Technician (E.M.T.) Program is the basis for all higher levels of certification in Virginia. This program provides general instruction in all areas of human body systems and initial care for a wide range of medical conditions. The first semester of this course requires a minimum of 110 hours of classroom and skills instruction plus 10 hours of clinical observation in a hospital or pre-hospital setting. During second semester students will complete 10 hours of clinical training at the Lynchburg General Hospital Emergency Room. This course will prepare students for the Virginia Department of Health Emergency Medical Technician Basic examination. *Maximum number of students per class 20. This course may be taken as a dual-enrollment course earning up to 8 college credits from Central Virginia Community College under the course numbers 8728AC, 8728BC. The CVCC course numbers are EMS 112 and 113 (3 credits each) and EMS 100 and 120 (1 credit each).*

HOSPITALITY & TOURISM

Hospitality & Tourism encompasses the management, marketing and operations of restaurants and other foodservices, lodging, attractions, recreation events and travel related services.

INTRODUCTION TO CULINARY ARTS (6440A), Grade 10, 1st Sem., One-half Credit. *Prerequisite: None*

This course teaches the skills necessary to succeed in food service careers and to ensure proper personal nutrition and wellness. Students study units on nutrition, safety and sanitation, food preparation skills, management of food dollars, and careers in the food service area. *Maximum number of students per class 20.*

CULINARY ARTS 1 (6441A, 6441B), Grade 11, E.C. Glass High, 1st & 2nd Sem., One Credit per Sem. *Prerequisite:*

Approved Application

This is a double-period course. Students are taught the managerial, production, and service knowledge and skills used in government, commercial, or independently owned institutional food establishments and related food industry occupations. Their study includes planning, selecting, storing, purchasing, preparing, and serving food and food products; basic nutrition, sanitation, and food safety; the use and care of commercial equipment; serving techniques; and the operation of institutional food establishments. Critical thinking, practical problem solving, and entrepreneurship opportunities within the field of culinary arts are emphasized. Teachers highlight the basic skills of math, science, and communication when appropriate in content. *Maximum number of students per class 20.*

HOSPITALITY & TOURISM (continued)

CULINARY ARTS 2 (6442A, 6442B), Grade 12, E. C. Glass High, 1st & 2nd Sem. One Credit per Sem. *Prerequisite: Culinary Arts 1 (6441A & 6441B)*

This is a double-period course. Students extend and expand skills learned in Culinary Arts 1, preparing for occupations such as chef/cook, baker/pastry helper, pastry decorator, hospitality worker, dietetic aide/assistant, food demonstrator, mixologist, and entrepreneur. Opportunities for mentorships under the supervision of the instructor will be a part of the class curriculum. Critical thinking, practical problem solving, and entrepreneurship opportunities within the field of culinary arts are emphasized. Teachers highlight the basic skills of math, science, and communication when appropriate in content. *Maximum number of students per class 20.*

HUMAN SERVICES

Preparing individuals for employment in career pathways that relate to families and human needs.

COSMETOLOGY 1 A & B (8340A, 8340B), Grade 11, Heritage High, 1st & 2nd Sem., One Credit per Sem.

Prerequisite: Approved Application

This is a double-period course. The course includes professional ethics, hygiene, good grooming, manicuring, and hair shaping and styling. This course also includes student practice in scalp and hair treatments, the care and styling of wigs, permanent waving and hair removal. Related topics also include skin, scalp and hair disorders.

COSMETOLOGY 2 A & B (8350A, 8350B), Grade 12, Heritage High, 1st & 2nd Sem., One & One-half Credits Per Sem. *Prerequisite: Cosmetology 1 (8340 A & B)*

This is a triple-period course. The course includes beauty salon management and operation, additional work developing competencies in electricity and light therapy, chemistry, anatomy and physiology, chemical hair relaxing and hair coloring. Students will complete final preparation for taking the state license cosmetology examination.

INFORMATION TECHNOLOGY

Courses in this area can prepare students for entry level, technical, and professional careers related to the design, development, support and management of hardware, software, multimedia, and systems integration services.

INTRODUCTION TO INFORMATION TECHNOLOGY A & B (8531A, 8531B), Grade 10, Heritage High, 1st or 2nd Sem., One-half Credit per Sem. *Prerequisite: None*

Students are introduced to the world of information technology using the computer as a problem-solving tool. Emphasis is placed on using basic touch keyboarding skills to complete a variety of projects incorporating word processing, database, presentation, and spreadsheet software. Students will learn basic software maintenance functions of Windows XP, Vista and Windows 7. Students will learn fundamental skills associated with the maintenance of computers and internet safety. Students will learn how to diagnose, troubleshoot, and repair personal computer hardware and software problems.

INFORMATION TECHNOLOGY (continued)

COMPUTER SYSTEMS TECHNOLOGY 1 A & B (8540A, 8540B), Grade 11, Heritage High, 1st & 2nd Sem., One-half Credit per Sem. Prerequisite: Approved Application

Students will obtain the knowledge and skills necessary to service microcomputer hardware and supported peripherals, build a computer from parts, and continue the preparation for a successful result on the CompTIA A+ Essentials and Specialization Area Exam. Students will learn how to diagnose, troubleshoot, and repair personal computer advanced hardware and software issues. All CST students will attempt the A+ Essentials and A+ Specialization exams. A student must pass both exams to become fully certified. Students will attempt the Internet and Computing Core Certification (IC3) exam offered through Certiport. **This course may be taken as a dual enrollment course earning 3 college credits from Central Virginia Community College under the course numbers 8548AC, 8548BC. The CVCC course number is ETR 149.**

COMPUTER SYSTEMS TECHNOLOGY 2 (8550A, 8550B), Grade 12, Heritage High, 1st & 2nd Sem., One-half Credit per Sem. Prerequisite: Computer Systems Technology 1 (8540 A & 8540B) Prerequisite may be waived by instructor.

This course will equip students with the fundamental knowledge, skills, and understanding that will enable them to install, troubleshoot and maintain data, voice, and video cabling. This hands-on, learning environment allows students to progress at their own pace and complete assignments within their own timeframe. Students will continue to obtain the knowledge and skills necessary to service microcomputer hardware and supported peripherals. Students learn how to diagnose, troubleshoot, and repair basic networking and advanced hardware and software issues. Students will attempt the Internet and Computing Core Certification (IC3) exam offered through Certiport and may be eligible to participate in a number of other certification exams. **This course may be taken as a dual enrollment course earning 4 college credits from Central Virginia Community College under the course numbers 8558AC, 8558BC. The CVCC course number is ITE 221.**

COMPUTER NETWORKING AND HARDWARE 1 (8551A, 8551B), Grade 11-12, Heritage High, 1st & 2nd Sem., One-half Credit per Sem. Prerequisite: Approved Application

This course teaches the skills needed to obtain entry-level positions as home network installers or network, computer, or help desk technicians. It provides a hands-on introduction to networking and the Internet using tools and hardware commonly found in home and small business environments. It provides a basic overview of routing, remote access, addressing, and security, including network monitoring. It also familiarizes students with servers that provide e-mail services, web space, and authenticated access, and troubleshooting skills are taught in real-life contexts. Students learn about the soft skills required for help desk and customer service positions, and the course prepares students for the CCENT exam, a first step on the path toward the N+ and IC3 exams at the conclusion of the second year course.

INFORMATION TECHNOLOGY (continued)

COMPUTER NETWORKING AND HARDWARE 2 (8552A, 8552B), Grade 11-12, Heritage High, 1st & 2nd Sem., One-half Credit per Sem. Prerequisite: Computer Networking and Hardware 1 (8551A & 8551B) Prerequisite may be waived by instructor.

The first semester of this course familiarizes students with the equipment applications and protocols installed in enterprise networks with a focus on switched networks, IP telephony requirements, and security. It also introduces advanced routing protocols such as Enhanced Interior Gateway Routing Protocol (EIGRP) and Open Shortest Path First (OSPF) protocol. Hands-on exercises, including configuration, installation, and troubleshooting, reinforce student learning. Second semester introduces students to network design processes using two examples: a large stadium enterprise network and a medium-sized film company network. Students follow a standard design process to expand and upgrade each network including requirements gathering, proof-of-concept, and project management. Lifecycle services, including upgrades, competitive analyses, and system integration, are presented in the context of pre-sale support. Students will prepare to take the N+ and IC3 industry certification exams. **This course may be taken as a dual enrollment course earning 4 college credits from Central Virginia Community College under the course numbers 8578AC, 8578BC. The CVCC course number is ITN 154.**

MANUFACTURING

Courses in this area can prepare students for careers in planning, managing and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance and manufacturing/process engineering.

MANUFACTURING SYSTEMS (8440A, 8440B), Grade 10, E. C. Glass High, 1st or 2nd Sem. One-half Credit.

Prerequisite: None

This is an exploratory course designed to provide an orientation to careers in various fields of manufacturing. Emphasis will be placed on automated machining techniques, blueprint reading, and material identification, fundamental machining operations, welding, construction, plumbing, electricity, building, masonry and safety. Students will work together as well as individually to manufacture and produce useful products. *Maximum number of students per class 20.*

PRECISION MACHINE TECHNOLOGY 1 A & B (8450A & 8450B), Grade 11, E.C. Glass High, 1st & 2nd Sem. One Credit per Sem. Prerequisite: Approved Application

This is a double-period course. Content includes safety, hand tools, bench work, layout work, blueprint reading, drilling and tapping, machine shop math, and introduction to the trade. The course also includes precision measuring tools, use of charts and tables, an introduction to the CNC mill and lathe, tool grinding, and surface grinding. *Maximum number of students per class 20.*

MANUFACTURING (continued)

PRECISION MACHINE TECHNOLOGY 2/INTRODUCTION TO MACHINE TOOLS (8460A, 8460B), Grade 12, E.C. Glass High, 1st & 2nd Sem., One Credit per Sem. Prerequisite:

Precision Machine Technology 1 (8450 A & 8450B)

This is a double-period course. Course content includes metal lathe work, drilling, milling machine, and speed and feed calculations. Drill press work includes drilling and countersinking. Also included is an introduction to computerized vertical milling machine and lathe. Qualified seniors are eligible to participate in a work experience program with local machining companies. *Maximum number of students per class 20. This course may be taken as a dual-enrollment course earning 6 college credits from Central Virginia Community College under the course numbers 8468AC, 8468BC. The CVCC course numbers are MAC 161 (3 credits) and 162 (3 credits).*

MARKETING, SALES & SERVICE

Courses in this area can prepare students for careers in planning, managing, and performing marketing activities to reach organizational objectives.

SPORTS, ENTERTAINMENT, AND RECREATION

MARKETING A & B (6942A, 6942B) Grades 10-12, Heritage High, 1st & 2nd Sem., One-half Credit per Sem. Prerequisite:

Approved Application

Sports, Entertainment and Recreation Marketing (SER) is an entry level course offered in the two-year marketing program. This course is designed to develop an understanding of sports, entertainment and recreation marketing and its importance. Students develop fundamental skills for SER event planning, implementing, and evaluating. Students will learn market research, advertising, public relations, professional communications, effective selling, licensing and merchandising, branding, and event safety and security. Students learn career options available in the SER industries as well as develop skills necessary for successful initial employment experiences.

MARKETING 1 A & B (6951A, 6951B), Grades 11 & 12, Heritage High, 1st & 2nd Sem., One-half Credit per Sem.

Prerequisite: Approved Application

Content includes risk management, product planning, communicating effectively and selling techniques. In special situations, a project plan may be substituted for the work experience requirement. This option must be teacher approved in advance. Content also includes relationships with employers, co-workers, and customers, advertising, inventory, safety, ad layout, display, free enterprise system, pricing, and economics. Continuous part-time employment and/or project plan and DECA membership are required.

MARKETING, SALES & SERVICE (continued)

MARKETING 2 A & B (6960A, 6960B), Grade 12, Heritage High, 1st & 2nd Sem., One Credit per Sem. Prerequisite:

Marketing 1(6950A & 6950B) or Sports, Entertainment and Recreation Marketing (6942A & 6942B).

Students earn one-half credit per semester for the classroom component of this course and another one-half credit per semester for the required 360 hours of on-the-job training each semester. Content includes human resource, marketing research, creative selling, payroll, merchandising, determining profit, and purchasing. In special situations, a project plan may be substituted for the work experience requirement. This option must be teacher approved in advance. Content also includes supervisory communications, personnel management, leadership styles, supervision of sales promotion, supervision of product transportation, and responsibilities of supervisory and mid-management personnel. Continuous part-time employment and/or project plan and DECA membership are required. **If, in an exceptional case, a student is only able to participate in the classroom component, one-half credit per semester can be earned under the course numbers 6961A or 6961B.**

COOPERATIVE TECHNICAL EDUCATION 1 A & B (8940A, 8940B), Grade 11, E.C. Glass High, 1st & 2nd Sem., One

Credit per Sem. Prerequisite: Approved Application

Content includes career exploration and job search, job application and interview, labor issues, personal development, and employer-employee relations. Content also includes income taxes, personal finance and money management, communications, professional etiquette, and related computer applications. Students will explore and participate in SkillsUSA's Professional Development Program and Virginia's All Aspects of Industry curriculum. **In addition to the classroom component, students must maintain an approved part-time job and successfully complete 200 hours of on-the-job training each semester.**

COOPERATIVE TECHNICAL EDUCATION 2 A & B (8950A, 8950B), Grade 12, E.C. Glass High, 1st & 2nd Sem., One

Credit per Sem. Prerequisite: Cooperative Technical Education 1(8940 A & B) and Approved Application

Content includes small business operation, job advancement and promotions, consumer decision-making, financial protections for the worker, and related computer applications. Content also includes personal and family budgeting, using credit, insurance, independent living, team strategies, and workplace diversity. Each student will prepare a career portfolio. Students will explore and participate in SkillsUSA's Professional Development Program and Virginia's All Aspects of Industry curriculum. **In addition to the classroom component, students must maintain an approved part-time job and successfully complete 200 hours of on-the-job training each semester.**

MARKETING, SALES & SERVICE (continued)

COOPERATIVE TECHNICAL EDUCATION 3 - SENIOR INTENSIFIED A & B (8960A, 8960B), Grade 12, E.C. Glass High, 1st & 2nd Sem., One Credit per Sem. Prerequisite:

Approved Application

Content includes career exploration and job search, personal development, job application and interview, employee- employer relations, labor issues, financial protections for the worker, and related computer applications. Content also includes income taxes, personal finance and money management, insurance, independent living, communications, and professional etiquette. Students will explore and participate in SkillsUSA's Professional Development Program and Virginia's All Aspects of Industry curriculum. **In addition to the classroom component, students must maintain an approved part-time job and successfully complete 200 hours of on-the-job training each semester.**

SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS

Courses in this area can prepare students for careers in planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services, and research and development services.

BASIC TECHNICAL DRAWING A & B (6740A, 6740B), Grades 9-12, 1st & 2nd Sem., One-half Credit per Sem.

Prerequisite: None

This entry-level course is designed with an emphasis on the basic principles of drafting and sketching techniques, object visualization, the application of math concepts, and basic through intermediate computer assisted drawing (CAD) applications. Although 2D CAD techniques are emphasized, students also learn 3D modeling techniques at the end of the course. Students may be given the opportunity to compete in regional and state CAD competitions.

ENGINEERING DRAWING A & B (6750A, 6750B), Grades 10-12, 1st & 2nd Sem., One-half Credit per Sem. Prerequisite:

Basic Technical Drawing (6740 A & B)

This advanced-level course begins with sharpening skills learned in Basic Technical Drawing on the Computer Assisted Drafting (CAD) software. Students will be able to construct three-dimensional and solids drawings, as well as assembly drawings. As students' skills progress, CAD will be used as a tool to assist in completing design projects of increasing difficulty. Engineering principles are introduced and explored through the design projects. Emphasis will be on the development and honing of problem-solving skills and assembling professional design portfolios. The students will also be given the opportunity to compete in regional and state competitions in CAD and engineering design.

SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS (continued)

NUCLEAR TECHNOLOGIES (6770A, 6770B), Grades 11 or 12, 1st & 2nd Sem., One-half Credit per Sem. Prerequisite:

Approved Application

The first semester includes study of the evolution and history of robotics with an emphasis on automated and flexible manufacturing. Topics covered will include: machining, welding, electronics, pneumatics/hydraulics, design and mechanics, sensors and controls programming. Students will apply concepts learned in class to mechanical construction with LEGO and the FIRST Tech Challenge. During the second semester students study nondestructive examination and testing methods in order to examine an object, material, or system without impairing its future usefulness. Students will use visual and optical testing (VT), liquid penetrant testing (PT), magnetic particle testing (MT), radiographic testing (RT), ultrasonic testing (UT), and eddy current testing (ET) to assess various parameters. Students will also cover the basic fundamentals and application of radiation. **This course may be taken as a dual-enrollment course for 3 college credits from Central Virginia Community College under the course numbers 6778AC and 6778BC. The CVCC course number is IND 195.**

TECHNOLOGY FOUNDATIONS A & B (6640A, 6640B), Grades 9-12, Heritage High, 1st or 2nd Sem., One-half Credit.

Prerequisite: None

Technology Foundations is a modular approach to an academic and technology integrated curriculum. The topics include alternative energy, astronomy, computer- aided drafting, computer graphic design, computer problem-solving, construction technology, desktop publishing, residential modeling, satellite communications, video communications, and weather and meteorology. Presentations, field trips, and guest speakers will complement the modular concept.

TECHNOLOGY TRANSFER A & B (6650A, 6650B), Grades 10-12, Heritage High, 1st or 2nd Sem., One-half Credit.

Prerequisite: Technology Foundations (6640) or Teacher Approval

Technology Transfer is a course developed around a modular approach. The topics are animation, biotechnology, fiber optics, forensic technology, the Internet, and virtual reality. When the students complete these modules, they will be introduced to advanced levels of the modules they completed in Technology Foundations. This course will assist students in developing problem-solving techniques, using resources and developing critical thinking skills.

TRANSPORTATION, DISTRIBUTION & LOGISTICS

Courses in this area can prepare students for careers in planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.

INTRODUCTION TO AUTO BODY REPAIR A & B (8161A, 8161B), Grade 10, Heritage High, 1st or 2nd Sem., One-half Credit. Prerequisite: None

Students learn fundamental skills associated with the safe use of hand and power tools and the use of spray guns to refinish the modern automobile. *Maximum number of students per class 20.*

AUTO BODY REPAIR 1 A & B (8160A, 8160B), Grade 11, Heritage High, 1st & 2nd Sem., One Credit per Sem.

Prerequisite: Approved Application

This is a double-period course. Content includes basic hand and power tool use, minor dent repair, spray gun techniques, gas and electrical welding, techniques of metal shaping body filler and fiberglass repair. Special emphasis will be placed on surface preparation and priming. The content also includes the use of acrylic lacquer and acrylic enamel paint, major body panel replacement and alignment, writing damage estimates, and detailing a car before and after being painted. *Maximum number of students per class 20.*

AUTO BODY REPAIR 2 A & B (8170A, 8170B), Grade 12, Heritage High, 1st & 2nd Sem., One Credit per Sem.

Prerequisite: Auto Body Repair 1 (8160A & 8160B)

This is a double-period course. Content to include major frame repair and alignment, unibody damage assessment and repair, rubber and fiberglass repairs and fundamentals of operating an auto body repair business. Content also emphasizes preparing repair estimates and working with customers. *Maximum number of students per class 20.*

INTRODUCTION TO AUTO SERVICE TECHNOLOGY (8141A, 8141B), Grade 10, E. C. Glass High, 1st or 2nd Sem., One-half Credit. Prerequisite: None

Students learn fundamental skills associated with engine tune-up, electrical diagnosis and repair, lubrication and cooling system diagnosis and repair, brake system diagnosis and repair, basic fuel system diagnosis and repair, basic suspension system diagnosis and repair, and basic routine maintenance of automobiles. *Maximum number of students per class 20.*

AUTOMOTIVE SERVICE TECHNOLOGY 1 A & B (8140A, 8140B), Grade 11, E.C. Glass High, 1st & 2nd Sem., One Credit per Sem. Prerequisite: Approved Application

This is a double-period course. Content includes instruction and practice in the safe operation of laboratory power equipment, hand tools, and testing devices. Students will learn to access technical data through electronic media and paper manuals. Instruction in proper wheel and brake operation will also be included. Also included is instruction and practice in diagnostic procedures regarding automotive steering systems and components. Students will learn to assess and repair problems relating to wheels, alignment, suspension, shocks, struts, and axles. *Maximum number of students per class 20.*

TRANSPORTATION, DISTRIBUTION & LOGISTICS (continued)

AUTOMOTIVE SERVICE TECHNOLOGY 2 A & B (8150A, 8150B), Grade 12, E.C. Glass High, 1st & 2nd Sem., One Credit per Sem. Prerequisite: Automotive Service Technology 1 (8140A & 8140B)

This is a double-period course. Content includes instruction and practice in diagnostic procedures regarding automotive electrical systems and components and engine performance. Students will learn to assess and repair problems relating to circuits, battery systems, gauges, accessories, and lights. Students will also learn to assess and repair problems relating to ignition, fuel, exhaust, and emission control systems. Instructional topics also include pumps, carburetors, and associated electronics. Students will learn to use testing and scanning equipment to analyze computer and mechanically controlled systems. Instruction will also include reading and interpreting electrical schematics. The second semester of this course provides an opportunity for students to enroll in a work-study program. Students are eligible to take the state A.S.E. Certification test upon completion of this program.

MARINE CORPS JUNIOR R.O.T.C. LEADERSHIP PROGRAM

Heritage High School Only

This leadership education program is a three-year progression of academic courses that can be selected by anyone regardless of grade level during their attendance at Heritage High School. Participation as a fourth year student is limited to a very few individuals who are subjectively selected by the leadership department chair as "exceptional" candidates to fill student leadership positions within the organization of the classes. (It is possible to be qualified but not selected due to limited availability of positions.) This program of instruction is designed to emphasize development of positive character traits, self-discipline, responsibility for self and others, and leadership skills. This program is not intended to recruit students for military service; rather, it is intended to develop productive responsible citizens using the military as a role model for teaching these positive lessons. Instructional goals are reached through training in subjects such as close order drill, marksmanship, physical fitness, leadership traits/principles, and first aid/CPR.

Course Prerequisites:

- 1. Students must have a completed school physical and be able to participate in physical fitness activities such as calisthenics, running, hiking, climbing, and jumping. Inability to participate must be temporary and documented by appropriate medical authority.*
- 2. Students must conform to U. S. Marine Corps standards regarding wearing of the uniform, haircuts/hairstyle/color, make-up/jewelry, body piercing, tattoos, shave and fingernail polish. Many businesses/industries/occupations require wearing uniforms as a condition of employment. Military uniforms are worn in this class simply because they are provided free of charge to the students. We teach proper care and wearing of uniforms via this means.*
- 3. Students must be willing to follow the direction given by the teacher and students in leadership positions acting in accordance with the rules and articles governing the program.*
- 4. Students must be willing to participate in community service activities as extracurricular events necessary for attainment of points required for promotion to higher position within the program. (Simply attending class during the school day will not be sufficient to earn advancement and continuance in the program.)*

MARINE CORPS JUNIOR R.O.T.C. LEADERSHIP PROGRAM (continued)

MCJROTC LEADERSHIP EDUCATION 1 A & B (5710A, 5710B), All Grades, Heritage High only, 1st & 2nd Sem., One-half Credit Per Sem., 1st Sem. Prerequisite: listed above; 2nd Sem. Prerequisite: Completion of 5710 with a course average of 70% or higher.

This is an introductory course designed to provide basic knowledge in leadership training and self-discipline through close order drill, physical fitness, marksmanship, professional personal appearance through care and wearing of uniforms, and professional courtesy. Emphasis on this level is placed on personal goal setting, self-discipline and following direction.

MCJROTC LEADERSHIP EDUCATION 2 A & B (5720A, 5720B), All Grades, Heritage High only, 1st & 2nd Sem., One-half Credit Per Sem., 1st Sem. Prerequisite: Completion of 5710B with a course average of 70% or higher & attainment of the rank of Cadet Lance Corporal. (Promotion requirement worksheets detailing promotion requirements available upon request). 2nd Sem. Prerequisite: Completion of 5720 with a course average of 70% or higher.

The level of this course is more advanced than 1A and 1B and provides general study within each major area listed in 1A. Emphasis is placed on setting group goals, teamwork, individual responsibility, and accountability.

MCJROTC LEADERSHIP EDUCATION 3 A & B (5730A, 5730B), All Grades, Heritage High only, 1st & 2nd Sem., One-half Credit Per Sem., 1st Sem. Prerequisite: Completion of 5720 with a course average of 70% or higher & attainment of the rank of Cadet Sergeant. (Promotion requirement worksheets detailing promotion requirements available upon request). 2nd Sem. Prerequisite: Completion of 5730 with a course average of 70% or higher.

The level of this course is more advanced than 2A and 2B with emphasis on attainment of group goals, personal initiative, responsibility for others, and accountability. Student leaders are normally selected from the second semester of this class.

MCJROTC LEADERSHIP EDUCATION 4 A & B (5740A, 5740B), Selected Students, Heritage High only, 1st & 2nd Sem., One-half Credit Per Sem., 1st Sem. Prerequisite: Selection by the leadership department chair as well as completion of 5730B with a course average of 70% or higher & attainment of the rank of Cadet Gunnery Sergeant. 2nd Sem Prerequisite: Selection by the SMI and MI as well as completion of 5740 with a course average of 70% or higher

This course represents the final year of the four-year MCJROTC LEADERSHIP EDUCATION program. Emphasis is placed on demonstrating mastery of leadership skills through practical application as a student leader. Students must be prepared to complete independent reading, writing, and research assignments/special projects.

AIR FORCE JUNIOR R.O.T.C. LEADERSHIP PROGRAM

E.C. Glass High School only

AFJROTC is available at two levels, basic (entry level) and advanced. The program teaches respect; respect for constituted authority, respect for parents, and self-respect. It teaches orderliness, patriotism, personal honor, and self-reliance. It provides information on aerospace and develops a background that many find valuable in aviation and space careers, such as the social and physical sciences, navigation, propulsion systems, and the history and theory of flight. No obligation to the military services or college ROTC programs is incurred; however, advanced standing can be earned. A uniform is provided by the Air Force to be worn one day per week and at special functions. In all cases the prerequisite for a second semester course is the corresponding first semester course.

AFJROTC 1 A & B (5750A, 5750B), Grades 9-12, E.C. Glass High only, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: None

The course includes study of the history of aviation and space exploration, customs and courtesies of military service, and introduction to basic drill procedures. The course also includes study of aviation weather in the aerospace environment, aerospace careers, and drill and ceremonial procedures of the squad and flight.

AFJROTC 2 A & B (5760A, 5760B), Grades 9-12, E.C. Glass High only, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: 5750

Content includes theory of flight, aircraft propulsion systems, air navigation, introduction to military justice, and a review of drill and ceremonies at the flight level. Also included is study of aerospace vehicles; aircraft, rockets and missiles, techniques of managing squadron size drill formation, and methods of military instruction.

AFJROTC 3 A & B (5770A, 5770B), Grades 10-12, E.C. Glass High only, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: 5760

The course includes study of rocketing and spacecraft fundamentals, review of drill and ceremonies at squadron level; introduction to leadership principles and methods. Also included is the aerospace community, leadership qualities and techniques needed in the space age, vocational and educational opportunities available in aerospace enterprises, and an introduction to military management.

AFJROTC 4 A & B (5780A, 5780B), Grades 11 & 12, E.C. Glass High only, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: 5770

Content includes study of geopolitics, psychological foundation of leadership, military management, review of drill and ceremonies. Also included is the influence of human behavior in leadership, responsibilities and techniques of leadership, student planning and execution of instructional and co-curricular activity, introduction of survival training, and a study of Career Officer and Enlisted programs in the military services.

MUSIC

Band classes at the high school level are performance oriented and require the recommendation of the instructor for admission. Participation in performances and rehearsals outside school hours are required. Students will be recommended for the most appropriate program. Marching Band is an after-school activity that begins two weeks before school starts and continues through the fall season. It is extracurricular and carries no academic credit. Marching Band may be activated periodically in the spring and summer. Concerts are performed during the winter and spring. Although all band students are encouraged to perform in the Marching Band, it is not an absolute requirement. Non-band students are also eligible to try out for Marching Band as either musicians or flag and rifle corps members.

Chorus classes at the high school include both introductory and performance oriented programs. All require placement by or recommendation of the instructor. Both the Concert Choir (**Chorus 2**) and the Ensemble (**Chorus 3**) require participation in performances and rehearsals during and outside school hours.

Orchestra instruction at the high school level is performance oriented and some afternoons and evenings are required for rehearsals and performances.

In all cases the prerequisite for a second semester course is the corresponding first semester course.

These courses can be taken repeatedly for elective credit.

CONCERT BAND 1 A & B (5340A, 5340B), Grades 9-12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Staff Recommendation

Topics include developing competency in sight-reading, dynamics, rhythm interpretation, balance, and intonation.

SYMPHONIC BAND 1 A & B (5350A, 5350B), Grades 9-12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Director's Approval

Content includes the development of individual competency in sight reading, dynamics, rhythmic interpretation, intonation, and the concepts of ensemble performance.

JAZZ ENSEMBLE A & B (5360A, 5360B), Grades 9-12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Director's Approval

A study of the jazz idiom and the techniques related to playing the different styles with an introduction to basic improvisational skills. Content includes development of individual competency in sight reading, dynamics, rhythm interpretation, balance, and intonation.

WIND ENSEMBLE A & B (5370A, 5370B), Grades 9-12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Director's Approval & audition

Content includes a continuing development of skills with a focus on performance at the highest possible level.

PERCUSSION ENSEMBLE A & B (5380A, 5380B), Grades 9-12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Director's Approval & audition

Content includes the development of skills on drums, xylophone, timpani, bells, and music literature.

MUSIC (continued)

CHORUS 1 (5460A, 5460B), Grades 9-12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: None - Placement by Instructor (no audition required)

Content includes instruction in music fundamentals, three and four part singing, and correct vocal techniques. Placement will be according to vocal range.

CHORUS 2 A & B—CONCERT CHOIR (5470A, 5470B), Grades 9-12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Staff Recommendation (vocal audition required)

Content includes more difficult part work and public performances.

CHORUS 3 A & B—ENSEMBLE (5480A, 5480B), Grades 9-12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Staff Recommendation

Content includes a more extensive variety of music, both for reading skills and public performance, and a particular emphasis on the development of individual skills. Afternoon and evening practices are required in preparation for performances. Choreography and showmanship are included.

ORCHESTRA 1 A & B (5410A, 5410B), Grades 9-12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Staff Recommendation

Content includes opportunity for string players to develop greater facility in sight reading, bowing and articulation.

ORCHESTRA 2 A & B (5420A, 5420B), Grades 9-12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Director's Approval (audition required)

Content includes advanced positions, bowings, and interpretations using standard orchestra and string ensemble music. It is intended for students who have reached a high degree of performance proficiency.

BEGINNING MIDI & COMPUTER APPLICATIONS IN MUSIC (5430A, 5430B), Grades 10-12, Heritage High Only, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Some music background required

This course is an introduction to computer applications currently being used by composers, performers, and music educators. Topics to be covered include music notation and sequencing software, live MIDI performance techniques, educational software, CD ROM interactive applications, Internet resources, and a history of music technology.

ADVANCED PLACEMENT MUSIC THEORY A & B (5439A, 5439B), Grades 10-12, 1st & 2nd Sem., One-half Credit Per Sem. Prerequisite: Staff Recommendation based on the ability to read and write musical notation. Also recommended: concurrent enrollment in a music course.

This course introduces the student to musicianship, theory, musical materials and procedures. Integrates aspects of melody, harmony, texture, rhythm, form, musical analysis, elementary composition and, to some extent, history and style. Musicianship skills such as dictation and other listening skills, sight-singing, and keyboard harmony may be taught as a part of the course. **All students are required to pay the fee assessed by E.T.S. (unless a fee waiver is granted) and to take the advanced placement examination in May.**

ART

Two semesters of **Art 1** are prerequisite to most other art courses. Although instructional materials are provided, the student is often required to provide materials for individual projects that he/she retains. In addition, a lab fee is often required to cover the costs of consumable materials. Several advanced placement courses are available in the curriculum.

ART 1 A & B (5510A, 5510B), Grades 9-12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: None

The first semester of this course is an exploration of a variety of media with the elements of art and the development of basic studio skills as the central focus. The second semester content includes additional media exploration and studio skills development with a central focus on composition through the study of the principles of design.

DRAWING (5520A, 5520B), Grades 10-12, 1st or 2nd Sem., One-half Credit. Prerequisite: Art 1 A & B or Staff Recommendation

This course is an exploration of drawing media. Content includes the interpretation of the three-dimensional environment to a two-dimensional surface. Realistic, naturalistic, and contemporary drawing is part of the course of study. Subject matter will include still life, figure drawing, perspective studies, and nature.

PAINTING 1 (5530A), Grades 9-12, 1st Sem., One-half Credit. Prerequisite: Art 1 A & B or Recommendation

This course is an introduction to the basic techniques in opaque and transparent media, such as acrylics, oils, and watercolor. Brush and media control in both hard edge and blended edge technique will be explored. Students will need to purchase items or pay a fee for consumable materials.

PAINTING 2 (5540B), Grades 9-12, 2nd Sem., One-half Credit. Prerequisite: Painting 1

This course focuses on the study of composition in painting and the exploration of various painting styles. The further advancement of specific painting skills and the use of color will be a large part of the course of study. The development of an individualized direction will be a major focus. Students will need to purchase items or pay a fee for consumable materials.

SCULPTURE 1 (5550A, 5550B), Grades 10-12, 1st or 2nd Sem., One-half Credit. Prerequisite: Art 1 A & B or Recommendation

Sculpture is an exploration of a variety of three-dimensional media. Techniques will include both traditional and contemporary expression. The concepts of relief and in-the-round, in functional and non-functional directions will be explored.

SCULPTURE 2 (5551B), Grades 10-12, 2nd Sem. Only. One-half Credit. Prerequisite: Sculpture 1.

This course allows a student to focus on finding a concentration in sculpture in order to develop additional skill with a specific media or subject matter. This course builds on sculpture 1 as students develop pieces to be used in a 3-dimensional portfolio.

ART (continued)

DIGITAL PHOTOGRAPHY AND PRINTMAKING (5570A, 5570B), Grades 10-12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Art 1 A & B or Recommendation.

Course content includes study of traditional printing processes such as relief, monoprinting, lithography, intaglio, and serigraphy with an emphasis on design and composition. Digital photography and computer enhancement techniques will be explored. Comfort with computer technology is recommended.

COMMERCIAL ART (5580A, 5580B), Grades 10-12, 1st or 2nd Sem., One-half Credit. Prerequisite: Art 1 or Recommendation.

This course covers art as it issued in careers. An exploration of various careers and skills and techniques will be the central focus. Visual design and communication will be explored in various media. Vocabulary, technical skills, and creative direction will be major elements of evaluation. Comfort with computer technology is recommended.

ADVANCED STUDIO ART A & B (5517A, 5517B), Grades 11 & 12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Two Credits in Art and Staff Recommendation

This advanced level course expands on the content presented in the introductory course and allows students to explore areas of interest in greater depth.

ADVANCED PLACEMENT (AP) PORTFOLIO ART A & B (5519A, 5519B), Grades 11 & 12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Two Credits in Art and Staff Recommendation

This college-level course is structured around the portfolio requirements set by the College Board evaluation program. Students may develop a drawing portfolio (using a variety of 2-D media), a two-dimensional portfolio (using a variety of 2-D media with a design and graphics focus), or a three dimensional portfolio (using a variety of 3-D media). **Students must pay the fee assessed by E.T.S. (unless a fee waiver is granted) to submit a portfolio.**

ADVANCED PLACEMENT (AP) ART HISTORY A & B (5529A, 5529B), Grades 11 & 12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Previous experience in advanced placement.

This course is geared to students with a strong desire to explore, read about, and write about the history of art. All course activities are in preparation for the AP exam. **All students are required to pay the fee assessed by E.T.S. (unless a fee waiver is granted) and to take the advanced placement examination in May.**

DRAMA

Several opportunities are offered for students to develop their knowledge and skills in the dramatic arts, both "behind the scenes" and on stage. An active Drama Club and public performances are important parts of the program. Additional drama courses may be taken through Independent Study.

INTRODUCTION TO THEATRE (5610A, 5610B), Grades 9-12, 1st or 2nd Sem. One-half Credit. *Prerequisite: none.*

This course is a basic introduction to acting and other theatre skills. Course content includes units in Theatre Games, Improvisation, Stagecraft, Theatre Vocabulary and Terminology, and Theatre History.

MUSICAL THEATRE DANCE (5611A, 5611B) Grades 9-12, 1st or 2nd Sem. One-half Credit. *Prerequisite: Introduction to Theatre or Staff Recommendation.*

This course focuses on the various styles of dance prevalent in the musical theatre. Students will work in each dance style while learning how it has been used to develop and advance musical theatre. **This course may be taken repeatedly for elective credit.**

ACTING 1 (5620A, 5620B), Grades 9-12, 1st or 2nd Sem. One-half Credit. *Prerequisite: Introduction to Theatre or Staff Recommendation.*

This course includes the study of specific acting techniques and the practical application of those techniques in graded scene performances in class. The course is intended for students with a serious interest in acting as a career or hobby. **This course may be taken repeatedly for elective credit.**

ACTING 2 (5630A, 5630B), Grades 11 & 12, 1st & 2nd Sem. One-half Credit per Sem. *Prerequisite: Acting 1 and Staff Recommendation.*

This course is performance-oriented and includes public performances involving all class members during the year. **This course may be taken repeatedly for elective credit.**

HISTORY OF MUSICAL THEATRE (5621A) Grades 11 & 12, 1st Sem. Only. One-half Credit. *Prerequisite: Acting 1 or Staff Recommendation.*

This course introduces the student to the musical theatre genre including a history of musical theatre, the development of the genre with focus on each major advancement, reading and viewing major musical theatre works, and studying the contributions of important people in the development of the musical theatre.

PLAYWRITING (5622A) Grades 11 & 12, 1st Sem. Only. One-half Credit. *Prerequisite: Acting 1 or Staff Recommendation.*

This course will focus on the analysis of dramatic form and style; examination of plot, character, and thought; and expression through dialogue. It will include the practical application of theory by writing one-page plays and will culminate in the creation of a ten-minute play.

DIRECTING (5623B) Grades 11 & 12, 2nd Sem. Only. One-half Credit. *Prerequisite: Acting 1 or Staff Recommendation.*

This course offers students an opportunity to learn the techniques of directing a play. Each student will be required to direct two graded scenes in public performance during the semester.

DRAMA (continued)

APPLIED TECHNICAL THEATRE 1 (5640A, 5640B), Grades 9 - 12, 1st & 2nd Sem., One-half Credit Per Sem. *Prerequisite: Introduction to Theatre or Staff Recommendation.*

The course is designed to give students a working knowledge of the many aspects of backstage work. The course includes an overview of theatre history, safety, set construction, scene painting, electrics, sound stage rigging, backstage management and some design. The course includes classroom instruction, supplemental reading assignments, and practical hands-on work.

TECHNICAL THEATRE 1 DESIGN (5641A, 5641B) Grades 9-12, 1st or 2nd Sem. One-half Credit. *Prerequisite: Introduction to Theatre or Staff Recommendation.*

This course introduces students to the principles of design as they apply to performance and the design process. This is primarily a project-based class in which students will deal with the basic principles of scenic, costume, sound, and lighting design.

TECHNICAL THEATRE 1 PRODUCTION (5642B) Grades 9-12, 2nd Sem. Only. One-half Credit. *Prerequisite: Introduction to Theatre and Staff Recommendation.*

This course is an introduction to scenic construction, lighting, sound, stage organization, and terminology. Students will study the methods and materials of set construction and the methods of implementing lighting, costumes, props and sound within a production.

APPLIED TECHNICAL THEATRE 2 (5650A, 5650B), Grades 9 - 12, 1st & 2nd Sem., One-half Credit Per Sem. *Prerequisite: Applied Technical Theatre 1 and Staff Recommendation*

This is an advanced course that will focus on the design elements of the theatre. Students receive instruction in set, lighting and sound design and are required to complete design projects in class and out. The course includes a study of different design techniques, methods of presenting design effectively, and an emphasis on using design as a tool to further express the drama. This course may be taken repeatedly for elective credit.

TECHNICAL THEATRE 2 (5651A, 5651B) Grades 10-12, 1st & 2nd Sem. *Prerequisite: Technical Theatre 1 Design, Technical Theatre 1 Production or Staff Recommendation.*

This course will focus on advanced design and implementation of elements in the theatre. As part of this course, students will be involved in the backstage aspects of school productions. **This course may be taken repeatedly for elective credit.**

COSTUMING (5652B) Grades 11 & 12, 2nd Sem. Only. One-half Credit. *Prerequisite: Technical Theatre 1 Design, Technical Theatre 1 Production, or Staff Recommendation.*

This course introduces the art of design with specific emphasis on its relation to costuming for the theatre. Students will explore the use of various media and techniques used for the creation of costume design. A variety of rendering techniques may be explored including collage, watercolor, and transfer drawing. **This course may be taken repeatedly for elective credit.**

FINE ARTS EXPLORATORY

ARTS APPRECIATION A & B (5461A, 5461B), Grades 9-12, 1st or 2nd Sem., One-half Credit. *Prerequisite: None*

This one semester elective course is in the format of a three part exploratory rotation. Students are provided six-weeks of introductory instruction in each of the three content areas: art, chorus, and drama. Content includes, in turn, vocal music fundamentals, an exploration of art media, elements, and basic studio skills, and essentials of theater including basic history, vocabulary, stagecraft, and improvisation.

STUDENT INTERN PROGRAMS

COMPUTER STUDENT INTERN (7120A, 7120B), Grades 11 & 12, 1st or 2nd Sem., One-fourth Credit. *Prerequisite: Staff Recommendation*

This course includes opportunities to assist a staff member one period daily in a computer science or business education laboratory. **This course is graded as pass or fail. This course may be taken repeatedly for elective credit.**

ELEMENTARY OR MIDDLE SCHOOL STUDENT INTERN A & B (7130A, 7130B), Grades 11 & 12, 1st & 2nd Sem., One-half Credit Per Sem. *Prerequisite: Staff Recommendation*

Content includes assignment to an elementary or middle school teacher one period daily. Students may tutor, help with projects, read stories, or perform clerical duties. In addition, middle school student interns may work in lab settings. Seminars are presented by educators in various fields during the semester. This course offers a career exploration opportunity for students considering elementary education or a child related field. Students must have their own transportation or be assigned to a school within walking distance. **This course may be taken repeatedly for elective credit.**

GENERAL STUDENT INTERN (7131A, 7131B) Grades 11-12, 1st or 2nd Sem., One-fourth Credit. *Prerequisite: Staff Recommendation*

This course is available to a limited number of students who want to gain experience in the career field which they intend to pursue after high school. Students must submit an application for acceptance in the program to the guidance counselor during the registration process in grade 10. Students must locate and arrange their own placements as well as provide their own transportation. **This course is graded as pass or fail. This course may be taken repeatedly for elective credit.**

TEACHER/OFFICE INTERN (7110A, 7110B) Grades 10-12, 1st or 2nd Sem., One-fourth Credit. *Prerequisite: Staff Recommendation*

Course includes opportunities to assist a staff member one period daily. **This course is graded as pass or fail. This course may be taken repeatedly for elective credit.**

NEWSPAPER

NEWSPAPER A & B (7410A, 7410B), Grades 10-12, 1st & 2nd Sem., One-half Credit Per Sem. *Prerequisite: Staff Recommendation*

Content includes preparation, editing and publication of school newspaper. This course meets daily, just as other credit-bearing courses. **This course may be taken repeatedly for elective credit.**

YEARBOOK

YEARBOOK A & B (7420A, 7420B), Grades 10-12, 1st & 2nd Sem., One-half Credit Per Sem. *Prerequisite: Staff Recommendation*

Content includes preparation, editing and publication of school yearbook. This course meets daily, just as other credit-bearing courses. **This course may be taken repeatedly for elective credit.**

LEADERSHIP

LEADERSHIP TRAINING (7770A, 7770B), Grades 9-12, 1st or 2nd Sem., One-half Credit. *Prerequisite: Student interest and staff recommendation*

This is a one semester elective credit course that provides opportunities for students to learn about and engage in leadership activities. **This course may be taken repeatedly for elective credit.**

POSITIVE PARENTING PROGRAM

Pregnant high school students may enroll in the Positive Parenting Program (P3) or they may continue to attend their base school. If they elect to participate in the Positive Parenting Program, they will be enrolled in semester elective courses in child development and care, family health and development, or nutrition and food preparation in addition to their regular classes. Transportation is provided for Heritage High School students who participate in this program. Homebound instruction will be provided for pregnant middle school students and for both middle and high school students immediately following childbirth.

FAMILY HEALTH & SOCIAL DEVELOPMENT (5241A, 5241B), Grades 9 or 10, 1st or 2nd Sem., One-half Credit. *Prerequisite: None*

This course fulfills the health and family life education requirement for students in grade ten. The course includes lessons related to prenatal personal health, substance abuse, dietary choices, self-control, goal setting, family health habits, violence prevention, and community health services. An extended study of caring for infants and toddlers is provided and early childhood nutrition, safety, and preventive health topics are presented.

CHILD DEVELOPMENT AND CARE (7480A, 7480B), Grades 9-12, 1st & 2nd Sem., One-half Credit Per Sem. *Prerequisite: None*

Students learn the basics of the development of children from birth through toddler age. Expectations for postnatal parental responsibility are presented with an emphasis on building a nurturing relationship between parents and children. The course also focuses on the importance of early childhood education.

NUTRITION AND FOOD PREPARATION (7481A, 7481 B), Grades 9-12, 1st & 2nd Sem., One-half Credit Per Sem. *Prerequisite: None*

Students learn the skills necessary to prepare nutritious foods in a safe manner. Students study units on nutrition, cost effective food preparation, safety and sanitation, and other food preparation skills.

ACADEMIC SUPPORT

SOL REVIEW FOR ENGLISH: R/L/R 11 (7211A, 7211B), Grade 12, 1st or 2nd Sem., One-half Credit. Prerequisite:

Passed English 11 but failed English: Reading SOL test

A one semester elective credit course including a review of the standards covered on the English: Reading/Literature/Research SOL test for 11th grade. This course will focus on the content of the test and on study and testing-taking strategies. Specific diagnostic information from practice SOL testing will guide direct teaching and computer-assisted instruction targeting each student's knowledge and skill deficits.

SOL REVIEW FOR ENGLISH: WRITING 11 (7212A, 7212B), Grade 12, 1st Sem., One-half Credit. Prerequisite:

Passed English 11 but failed English: Writing SOL test

A one semester elective credit course including a review of the standards covered on the English: Writing SOL test for 11th grade. This course will focus on the content of the test and on study and testing-taking strategies. Specific diagnostic information from practice SOL testing will guide direct teaching and computer-assisted instruction targeting each student's knowledge and skill deficits.

SOL REVIEW FOR MATH (7221A, 7221B), Grades 10-12, 1st or 2nd Sem., One-half Credit. Prerequisite:

Passed a math course (Algebra 1, Geometry, or Algebra 2) but failed the associated SOL test

A one semester elective credit course including a review of the math standards covered on the appropriate math SOL test. This course will focus on the content of the test and on study and testing-taking strategies. Specific diagnostic information from practice SOL testing will guide direct teaching and computer-assisted instruction targeting each student's knowledge and skill deficits.

SOL REVIEW FOR SCIENCE (7231A, 7231B), Grades 10-12, 1st or 2nd Sem., One-half Credit. Prerequisite:

Passed a science course (Earth Science or Biology) but failed the associated SOL test

A one semester elective credit course including a review of the science standards covered on the appropriate science SOL test. This course will focus on the content of the test and on study and testing-taking strategies. Specific diagnostic information from practice SOL testing will guide direct teaching and computer-assisted instruction targeting each student's knowledge and skill deficits.

SOL REVIEW FOR SOCIAL STUDIES (7241A, 7241B),

Grades 10-12, 1st or 2nd Sem., One-half Credit. Prerequisite:

Passed a social studies course (World History and Geography 1, World History and Geography 2, Geography, or U.S. History) but failed the associated SOL test

A one semester elective credit course including a review of the social studies standards covered on the appropriate social studies SOL test. This course will focus on the content of the test and on study and testing-taking strategies. Specific diagnostic information from practice SOL testing will guide direct teaching and computer-assisted instruction targeting each student's knowledge and skill deficits.

ACADEMIC SUPPORT (continued)

SAT PREPARATION (7610A, 7610B), Grades 11 or 12, 1st or 2nd Sem., One-half Credit. Prerequisite:

None

This is a one semester elective credit course that provides a review of the content of the critical reading, mathematics, and writing components of the Scholastic Aptitude Test (SAT) I.

ENGLISH AS A SECOND LANGUAGE (ESL) SUPPORT (1930A, 1930B), Grades 9-12, 1st or 2nd Sem., One-half Credit. Prerequisite:

Identified ESL students only

This is a one semester elective credit course that provides additional support to assist students with Limited English Proficiency (LEP) in their acquisition of English language knowledge and skills.

ACCELERATING READING 1 (1192A, 1192B), Grade 9, 1st & 2nd Sem., One-half Credit Per Sem. Prerequisite:

Identified students only

This is an elective credit course that provides additional strategies and skills for students who are working to improve their vocabulary, reading fluency and comprehension.

ACCELERATING READING 2 (1130A, 1130B), Grades 10-12, 1st & 2nd Sem., One-half Credit Per Sem. Prerequisite:

Identified students only

This is an elective credit course that provides additional strategies and skills for students who are working to improve their vocabulary, reading fluency and comprehension.

MATH LAB (7222A, 7222B), Grades 9-10, 1st and 2nd Sem. One-half Credit Per Sem. Prerequisite:

Identified students only

This course is designed to strengthen essential computational, pre-algebraic, and algebraic skills while the student is concurrently enrolled in Algebra 1. The course is provided using a research-based, computer-assisted instructional program with topics aligned with the content in the core Algebra 1 course. This course awards elective credit.

STUDY HALL (STUDYA, STUDYB), Grades 9-12, 1st or 2nd Sem. No Credit Prerequisite:

Identified students only

COURSES FOR THE MODIFIED STANDARD OR SPECIAL DIPLOMA

The following courses are designed to provide students with identified disabilities the knowledge and skills necessary to qualify for a Modified Standard or a Special Diploma. Information on the specific course requirements and SOL test requirements is listed in this program of studies on page 6.

- ENGLISH 9 (1090A, 1090B), Grade 9, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: None**
- ENGLISH 10 (1000A, 1000B), Grade 10, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: English 9**
- AMER LIT Pt 1 (1010A, 1010B), Grade 11, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: English 10**
- ENGLISH 12 (1020A, 1020B), Grade 12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: English 11**
- WRITING SKILLS 9 (1093A, 1093B), Grade 9, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: None**
- WRITING SKILLS 10 (1003A, 1003B), Grade 10, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Writing Skills 9**
- WRITING SKILLS 11 (1013A, 1013B), Grade 11, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Writing Skills 10**
- WRITING SKILLS 12 (1023A, 1023B), Grade 12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Writing Skills 11**
- READING 1 (1040A, 1040B), Grades 9-12, 1st or 2nd Sem., One-half Credit. Prerequisite: None**
- READING 2 (1041A, 1041B) Grades 9-12, 1st or 2nd Sem., One-half Credit. Prerequisite: Reading 1**
- READING 3 (1042A, 1042B) Grades 9-12, 1st or 2nd Sem., One-half Credit. Prerequisite: Reading 2 & 3**
- ALGEBRA 1 Pt 1 (2090A, 2090B), Grade 9, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: None**
- GEOMETRY Pt 1 (2000A, 2000B), Grade 10, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: Algebra 1 Pt 1**
- PERSONAL FINANCE (2010, 2011 both A & B), Grade 11 or 12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: two credits of math**
- US/VA HISTORY Pt 1 (4090A, 4090B), Grades 9-11, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: None**
- GOVERNMENT (4000A, 4000B), Grades 10 & 12, 1st & 2nd Sem., One-half Credit Per Sem., Prerequisite: US/VA History Pt 1**
- EARTH SCIENCE Pt 1 (3090A, 3090B), Grade 9, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: None**
- BIOLOGY Pt 1 (3000A, 3000B), Grade 10, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: Earth Science Pt. 1**
- LIFE SKILLS 9 (5090 A & B), Grade 9, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: None**
- LIFE SKILLS 10 (5000 A & B), Grade 10, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: Life Skills 9**
- LIFE SKILLS 11 (5010 A & B), Grade 11, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: Life Skills 10**
- LIFE SKILLS 12 (5020 A & B), Grade 12, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: Life Skills 11**

- WORK SKILLS 9 (5091 A & B), Grade 9, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: None**
- WORK SKILLS 10 (5001 A & B), Grade 10, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: Work Skills 9**
- WORK SKILLS 11 (5011 A & B), Grade 11, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: Work Skills 10**
- WORK SKILLS 12 (5021) A & B, Grade 12, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: Work Skills 11**

- EDUCATION FOR EMPLOYMENT (6030 A & B), Grades 9-12, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: None**
- WORK EXPERIENCE 1 (6040 A & B), Grades 9-12, 1st or 2nd Sem., One Credit Per Sem., Prerequisite: Education for Employment. This is a double-period course. This same course is available in a single period for one-half credit per semester under course number 6041 A&B.**
- WORK EXPERIENCE 2 (6050 A & B), Grades 9-12, 1st or 2nd Sem., One Credit Per Sem., Prerequisite: Work Experience 1. This is a double-period course. This same course is available in a single period for one-half credit per semester under course number 6051 A&B.**
- INTERPERSONAL SKILLS (5050 A & B), Grades 9-12, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: None**
- OCCUPATIONAL SKILLS (5051 A & B), Grades 9-12, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: None**
- RECREATION AND LEISURE SKILLS (5052 A & B), Grades 9-12, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: None**
- FUNCTIONAL ACADEMICS (5053 A & B), Grades 9-12, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: None**
- DAILY LIVING SKILLS (5070 A & B), Grades 9-12, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: None**
- ADAPTIVE PHYSICAL EDUCATION (5071 A & B), Grades 9-12, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: None**
- CAREER BASED JOB TRAINING (5072 A & B), Grade 9-12, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: None**

- DRIVER'S EDUCATION AND FAMILY RELATIONSHIPS (5096 A & B), Grade 9-12, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: None**

- GENERAL RESOURCE (5040 A & B), Grade 9-12, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: None**
This course can be taken repeatedly for elective credit.

- SUPPORT RESOURCE 1 (5041 A & B), Grades 9-12, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: None**
- SUPPORT RESOURCE 2 (5042 A & B), Grades 9-12, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: None**
- SUPPORT RESOURCE 3 (5043 A & B), Grades 9-12, 1st or 2nd Sem., One-half Credit Per Sem., Prerequisite: None**

For additional information about these courses or the modified or special diploma options, please contact the guidance counselors or special education teachers at either high school

CENTRAL VIRGINIA GOVERNOR'S SCHOOL (CVGS)

The Lynchburg City Schools partner with the Central Virginia Governor's School for Science & Technology (www.cvgs.k12.va.us) to provide opportunities beyond the scope of normal high school curricula to gifted students interested in mathematics, science and technology. CVGS students pursue an innovative curriculum, which allows them to cultivate their special talents in mathematics and science through an individual research program, in-depth laboratory experiences and extensive integration of technology into all courses. Instruction is designed to meet the needs of the gifted learner in a challenging independent learning environment that stimulates critical thinking and creative problem solving and emphasizes the development of time management and collaboration skills. CVGS is one of 15 academic year Governor's Schools across the state approved by the Virginia Board of Education and sponsored and evaluated by the Virginia Department of Education.

LCS students, who have a 3.0 unweighted GPA in high school science and mathematics courses, are eligible to apply for admission to the program in February of their sophomore year. Students who do not have an unweighted 3.0 GPA in these courses may apply if they have a PSAT score in math greater than 65 or SAT score in math that is greater than 650. Students must complete an application and must demonstrate an interest in math, science, and technology as well as the ability to work independently. Selection is competitive, and successful applicants from the Lynchburg City Schools must maintain a high GPA in order to remain in the program.

Students from Amherst County, Appomattox County, Bedford County, Campbell County and Lynchburg City attend the Governor's School. Each school division has an identified number of spots for students. The selection of students is based on procedures and policies developed within each division. Successful applicants from the Lynchburg City Schools have been students who have received high grades in the most rigorous math and science courses available, who have been extremely successful in other academic areas, and who have strong standardized test scores. The average SAT scores for recent Governor's School students are verbal-662, math-658. The following courses are offered at the Central Virginia Governor's School. In all cases the prerequisite for a course is admission to the Central VA Governor's School. For more information contact your child's guidance counselor or Mrs. April Bruce, Director of Testing, Guidance, and Gifted Education at 522-3700, Ext 136, or via email at bruceam@lcsedu.net.

CVGS RESEARCH COURSE A & B (3217AG, 3217BG), Grade 11, 1st & 2nd Sem., One-half Credit Per Sem. (4.5 GPA for A).

This course is an introduction to the research process which includes research design, elementary statistical analysis, library research, scientific writing and development of multimedia presentations. All students complete an individual research project. Students design the study, collect and analyze data and report the results in paper, poster board and WWW page formats. The course includes an internship for all students for twelve Friday mornings during the second semester.

CENTRAL VIRGINIA GOVERNOR'S SCHOOL (CVGS) (continued)

CVGS PHYSICS A & B (3219AG, 3219BG), Grade 11, 1st & 2nd Sem., One-half Credit Per Sem. (5.0 GPA for A)

CVGS physics is a college level calculus-based curriculum that introduces students to the study of everyday phenomena from the unifying perspective of the four fundamental forces. Topics include Newtonian mechanics, thermodynamics, electromagnetic theory, relativity, atomic theory, and modern physics. A college textbook, *Physics: Calculus 2nd Edition* by Eugene Hecht, is used in the course. Students explore and apply concepts through investigations requiring data collection and analysis in a computer-based laboratory, through use of models and computer simulations, and through interdisciplinary activities stressing the relationship between physics, mathematics, and technology. The course stresses development of problem solving, analytical thinking, laboratory, and communications skills.

CVGS MATH ANALYSIS A & B (2317AG, 2317BG), Grade 11, 1st & 2nd Sem., One-half Credit Per Sem. (4.5 GPA for A)

This is a pre-calculus course including an in-depth conceptual analysis of algebraic, polynomial, rational, logarithmic, exponential and trigonometric functions. Topics include graphical behavior, domains and ranges, roots (real & complex), turning points using the first derivative, graphing (using transformations with and without a graphing calculator), application problem solving and data analysis (using introductory statistics, given data, and data gathered in laboratory activities including the CBL and CBR). Parametric equations are presented with a focus on applications and conceptual analysis. Analysis includes required algebraic proof and/or conceptual explanations in all written and oral presentations. Graphing calculators, spread-sheets, and a computer algebra system are used extensively. The study of matrices is included and optional topics include an introduction to sequences and series.

CVGS COLLEGE BIOLOGY, DUAL ENROLLMENT A & B (3329AG, 3329BG), Grade 12, 1st & 2nd Sem., One-half Credit Per Sem. (5.0 GPA for A)

A college level introduction to biology focusing on the fundamental characteristics of living matter. Topics include the molecular to the ecological community level. Individual and group laboratory projects, computer simulations and data analyses are integral components of the course. Special laboratory skills involving digital and electron microscopy, advanced microbiology and biotechnology, and plant tissue culture are included. Students are expected to design and implement a special project related to their particular biological interests. Written and oral communication skills are enhanced by designing PowerPoint or web-based presentations. **This course includes a three-hour lab per week and exceeds the AP Biology curriculum. Upon successful completion of the course, students earn 4 semester hours per semester from Central Virginia Community College.**

CENTRAL VIRGINIA GOVERNOR'S SCHOOL (CVGS) (continued)

CVGS SENIOR TECHNOLOGY SEMINAR A & B (3227AG, 3227BG), Grade 12, 1st & 2nd Sem., One-half Credit Per Sem. (4.5 GPA for A)

Students are exposed to the use of sophisticated technologies in ten mini-labs focusing on biotechnology, CAD, desktop publishing, electron microscopy, Geographical Information Systems, high-speed photography, holography, microbiology, nuclear science, and robotics. Students also participate in an engineering project during the first six-weeks of the course. Engineers serve as mentors during the project.

CVGS COLLEGE COMPUTER SCIENCE, DUAL ENROLLMENT A & B (3729AG, 3729BG) Grade 12, 1st & 2nd Sem., One-half Credit Per Sem. (5.0 GPA for A)

A college level computer science course designed to teach object oriented programming techniques using C#. The course examines constructs for logic control, sequencing statements, input/output, searching and sorting and explores data structures including lists, trees, queues and stacks. All areas of the course make use of methods, classes and objects to demonstrate the object oriented concepts of encapsulation, inheritance, and polymorphism. The course introduces event driven programming in a Windows environment. **The course includes a three hour lab each week. Upon successful completion of the course, students earn 4 semester hours per semester from Central Virginia Community College.** The Virginia Department of Education has approved this course as a math credit, rather than as a science credit, when considered for partial fulfillment of Virginia's graduation requirements.

CVGS CALCULUS OF A SINGLE VARIABLE, DUAL ENROLLMENT A & B (2329AG, 2329BG), Grade 12, 1st & 2nd Sem., One-half Credit Per Sem. (5.0 GPA for A)

A college level study of differential and integral calculus. The course emphasizes the "Rule of Three" whereby topics are explored graphically, numerically and analytically. This course includes the study of limits, continuity, derivatives (definition, concepts), differentiation techniques (including inverse trigonometric functions and hyperbolic functions), curve sketching, optimization applications, an introduction to the definite integral, antiderivatives, definite and indefinite integrals, 1st and 2nd Fundamental Theorem of Calculus, integration techniques, improper integrals, Trapezoidal and Simpson's Rules, applications of the definite integral including geometry, density, center of mass and work, Infinite Series including Taylor Polynomials, separable differential equations with applications, slope fields, and Euler's Method. **Upon successful completion of the course, students earn 3 semester hours per semester from Central Virginia Community College.**

CENTRAL VIRGINIA GOVERNOR'S SCHOOL (CVGS) (continued)

CVGS CONNECTIONS IN MATHEMATICS A & B (2228AG, 2228BG), Grade 12, 1st & 2nd Sem., One-half Credit Per Sem. (4.5 GPA for A)

Connections in Mathematics, developed by the mathematics faculty at CVGS, incorporates recommendations and standards from NCTM and AAAS' Project 2061. This project-based course provides students with introductory experiences in symbolic logic, graph theory, probability, mathematics of finance, statistics, differential calculus, systems of equations and 3-D modeling. Emphasis is placed on conceptual understanding, solving real world applications, increased use of technology (spreadsheets, computer algebra systems, VRML editor and the internet), and fostering mathematical reasoning and communication.

CVGS LINEAR ALGEBRA/VECTOR CALCULUS, DUAL ENROLLMENT A & B (2429AG, 2429BG) Grade 12, 1st & 2nd Sem., One-half Credit Per Sem. (5.0 GPA for A)

A college level study of linear algebra (1st semester) and vector calculus (2nd semester). The linear algebra semester includes systems of equations, matrices, vector spaces, linear transformations, bases, dimension, eigen values, eigen vectors, and orthogonality. The vector calculus semester includes vector-valued functions, functions of several variables, vector fields, partial derivatives and multiple integrals. Both semesters emphasize computational techniques, geometry and theoretical structure, creative problem solving, and proofs. **Upon successful completion of the course, students earn 3 semester hours first semester and 4 semester hours second semester from Central Virginia Community College.**

COLLEGE HUMAN ANATOMY AND PHYSIOLOGY FOR THE HEALTH SCIENCES A & B (3339AG, 3339BG), Grade 12, 1st & 2nd Sem., One-half Credit Per Sem. (5.0 GPA for A)

This college level course will provide an overview of cellular physiology and will review many human organ systems including the nervous, respiratory, circulatory, digestive, skeletal, endocrine, muscular and urinary systems. Students will explore organ systems with the use of interactive modeling and will research current medical issues affecting one of the systems studied. **This course includes a three hour lab each week. Upon successful completion of the course, students earn five semester hours from Central Virginia Community College.**

The Lynchburg City School Division does not discriminate in admission to, or access to, or treatment or employment in its educational programs, services, or activities based on race, color, national origin, sex, disability, or age in accordance with state and federal laws. Inquiries regarding this policy may be directed to the Director of Personnel Services, 915 Court Street, P.O. Box 2497, Lynchburg, Virginia 24505-2497; telephone number (434) 522-3760 or 522-3700. ext. 155.