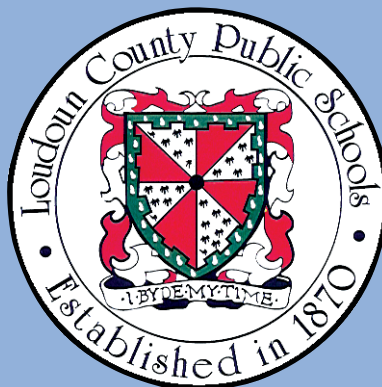


# PROGRAM OF STUDIES

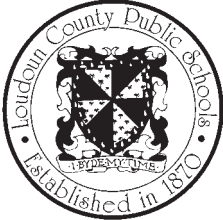
## High School

*Academic Year 2013–2014*



**Loudoun County Public Schools**

21000 Education Court ■ Ashburn, Virginia 20148



Edgar B. Hatrick, Ed. D.  
Division Superintendent

## LOUDOUN COUNTY PUBLIC SCHOOLS

### OFFICE OF THE SUPERINTENDENT

21000 Education Court  
Ashburn, Virginia 20148  
(571) 252-1020

Dear Students and Parents:

Your *High School Program of Studies* contains valuable information to help you in planning your course of study. You are fortunate to have a wide variety of courses from which to choose, and I encourage you to take full advantage of these courses in preparing yourself for your life after graduation from high school.

School counselors, teachers, and principals are anxious to help you in making wise choices, and I hope that you will seek their assistance in answering any questions you may have about this very important decision making process. You should take time to consider your goals, interests, abilities, and graduation requirements in developing your personal program of study.

I also encourage you to take time to review the information presented in the first pages of this booklet about such matters as diploma requirements and grading.

It is clear that upon graduation from high school you will be entering a world different from the one we know today. The educational opportunities offered in high school are designed to help you develop the skills you will need to live in that changing world, but the final responsibility for taking advantage of the opportunities provided for you rests with you, the student. I assure you that all of the staff in the schools will help you meet your goals.

I wish you every success in your high school years.

Sincerely,

Edgar B. Hatrick  
Superintendent

**LOUDOUN COUNTY SCHOOL BOARD—2013–2014**

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*Ashburn District*  
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**LOUDOUN COUNTY HIGH SCHOOLS**

**BRIAR WOODS HIGH SCHOOL**  
 22525 Belmont Ridge Road  
 Ashburn, Virginia 20148  
*Phone 703-957-4400*  
 Edward A. Starzenski, Principal  
 David Royhab,  
 Director of School Counseling

**BROAD RUN HIGH SCHOOL**  
 21670 Ashburn Road  
 Ashburn, Virginia 20147  
*Phone 571-252-2300*  
 Douglas A. Anderson, Principal  
 Robert Yarborough,  
 Director of School Counseling

**JOHN CHAMPE HIGH SCHOOL**  
 41535 Sacred Mountain Street  
 Aldie, VA 20105  
*Phone 703-722-2680*  
 John G. Gabriel, Principal  
 Christina Campbell,  
 Director of School Counseling

**DOMINION HIGH SCHOOL**  
 21326 Augusta Drive  
 Sterling, Virginia 20164  
*Phone 571-434-4400*  
 Dr. W. John Brewer, Principal  
 Kevin Terry,  
 Director of School Counseling

**FREEDOM HIGH SCHOOL**  
 25450 Riding Center Drive  
 South Riding, Virginia 20152  
*Phone 703-957-4300*  
 Douglas B. Fulton, Principal  
 Kenneth Christopher,  
 Director of School Counseling

**HERITAGE HIGH SCHOOL**  
 520 Evergreen Mill Road, SE  
 Leesburg, Virginia 20175  
*Phone 571-252-2800*  
 Jeffrey R. Adam, Principal  
 Jeannine Cummings,  
 Director of School Counseling

**LOUDOUN COUNTY HIGH SCHOOL**  
 415 Dry Mill Road, S.W.  
 Leesburg, Virginia 20175  
*Phone 571-252-2000*  
 William E. Oblas, Principal  
 Dan Croyle,  
 Director of School Counseling

**LOUDOUN VALLEY HIGH SCHOOL**  
 340 N. Maple Avenue  
 Purcellville, Virginia 20132  
*Phone 540-751-2400*  
 Susan A. Ross, Principal  
 LeeAnne Johnson,  
 Director of School Counseling

**PARK VIEW HIGH SCHOOL**  
 400 W. Laurel Avenue  
 Sterling, Virginia 20164  
*Phone 571-434-4500*  
 Dr. Virginia M. Minshew, Principal  
 Anthony Bauer,  
 Director of School Counseling

**POTOMAC FALLS HIGH SCHOOL**  
 46400 Algonkian Parkway  
 Potomac Falls, Virginia 20165  
*Phone 571-434-3200*  
 Janice Koslowski, Principal  
 Tamara Christman,  
 Director of School Counseling

**STONE BRIDGE HIGH SCHOOL**  
 43100 Hay Road  
 Ashburn, Virginia 20147  
*Phone 571-252-2200*  
 James E. Person, Principal  
 Tim Lucas,  
 Director of School Counseling

**TUSCARORA HIGH SCHOOL**  
 801 N. King Street  
 Leesburg, Virginia 20176  
*Phone 571-252-1900*  
 Pamela Paul-Jacobs, Principal  
 Gabrielle Carpenter,  
 Director of School Counseling

**WOODGROVE HIGH SCHOOL**  
 36811 Allder School Road  
 Purcellville, Virginia 20132  
*Phone 540-751-2600*  
 William S. Shipp, Principal  
 Geri Fiore,  
 Director of School Counseling

**OTHER SCHOOLS FOR HIGH SCHOOL STUDENTS OF LOUDOUN COUNTY**

**DOUGLASS SCHOOL**  
 407 E. Market Street  
 Leesburg, Virginia 20176  
*Phone 571-252-2060*  
 Dr. Jack Robinson, Principal  
 Juliana Baker, Sharon Bean,  
 Counselors

**LOUDOUN ACADEMY OF SCIENCE**  
 21326 Augusta Drive  
 Sterling, VA 20164  
*Phone 571-434-4470*  
 George J. Wolfe,  
 Science Academy Director  
 Jayne C. Fonash,  
 Director of School Counseling

**MONROE TECHNOLOGY CENTER  
 AND THE LOUDOUN GOVERNOR'S  
 CAREER AND TECHNICAL STEM ACADEMY**  
 715 Childrens Center Road, SW  
 Leesburg, Virginia 20175  
*Phone 571-252-2080*  
 Wagner Grier, Principal  
 Stacie Mininberg,  
 Placement Coordinator  
 Michelle Trudel, Counselor

**THOMAS JEFFERSON HIGH SCHOOL  
 FOR SCIENCE AND TECHNOLOGY**  
 6560 Braddock Road  
 Alexandria, Virginia 22312  
*Phone 703-750-8300*  
 Evan Glazer, Principal

## PURPOSE OF THIS *PROGRAM OF STUDIES*

This educational planning guide is designed to help students and their parents:

- make informed choices about high school courses,
- realize that academic performance from kindergarten through high school relates to future goals,
- understand Virginia graduation requirements, and
- assist students in planning and refining their plans of study.

Students should study this guide and consult with their parents, school counselors, and teachers in planning their individual program of studies.

## TABLE OF CONTENTS

General Information .....	1
Promotion and Credit Information .....	2–3
Diploma Requirements .....	4–6
Transferring into Virginia Public Schools .....	6
Awards for Exemplary Student Performance .....	6–7
Grade Point Average and Class Rank .....	7
Recommended Testing for College-Bound Students .....	8
Special Programs .....	9–11
Selection of Courses .....	11
Steps to Reading & Using the <i>Program of Studies</i> .....	11
Dual Enrollment Agreements .....	12–13
Career Clusters .....	13
Sample Plans of Studies .....	14–15
<b>Course Descriptions .....</b>	<b>16–60</b>
Art .....	16–17
Business & Information Technology .....	17–18
English/English Electives .....	19–22
English Language Learners .....	23–25
Family & Consumer Sciences .....	26–27
Health and Physical Education .....	27–28
World Languages and Cultures .....	28–32
Marketing .....	32
Mathematics Progression Chart .....	33
Mathematics .....	33–36
Music .....	37–39
Naval Junior Reserve Officers Training Corps (NJROTC) ..	39–40
Science .....	40–42
Social Science and Global Studies/Electives .....	43–47
Special Education .....	47
Technology Education .....	48
Other .....	49
LCPS Academy of Science .....	50–53
Programs at Monroe Technology Center .....	53–60
<b>Index of Course Offerings .....</b>	<b>61–66</b>

**ADMINISTRATIVE OFFICES**  
21000 Education Court  
Ashburn, Virginia 20148



## GENERAL INFORMATION

### SELECTING COURSES

Every student develops an academic/career plan in the 6<sup>th</sup> grade which begins in the 7<sup>th</sup> grade.

One copy of the plan is sent to the parents for their review, and another copy is maintained by the school counseling department.

Each year students review and revise the plans as they make decisions about courses needed for the next school year, and parents have the opportunity to review and help revise the selections.

Students and their parents should carefully review the course descriptions in this booklet. Questions about the courses should be directed to counselors, teachers, or department chairpersons.

### INDIVIDUALS WHO CAN HELP WITH COURSE AND CAREER DECISIONS

**Parents** have the greatest influence on their child's life.

**Counselors** help by:

- providing information about courses and the decision-making process,
- explaining and counseling about graduation requirements, including Standards of Learning requirements for standard and verified units of credit,
- assisting in developing academic and career plans,
- arranging interest inventories, aptitude tests, and college admissions tests,
- interpreting standardized tests, and
- assisting in the college application process.

**Teachers** teach the skills necessary for academic and career success, can help students see their strengths and weaknesses, and can make recommendations based on them.

**Career Centers** help by scheduling speakers and providing information on:

- summer programs
- Job-for-a-Day for Juniors
- careers
- military, career, trade, and technical schools
- colleges and universities
- financial aid

**School Libraries** provide additional resources for career and college planning.

**Community Members** offer opportunities for volunteer activities and their ideas about career options and courses that have made a difference in their lives.

### COURSE SELECTION CHANGES

Students are expected to select their courses and to adhere to their selections. In special situations, the principal may consider individual requests for changes.

Requests from students or their parents for a change in teachers cannot be allowed since such changes impact teaching loads and schedules. Consideration is given to requests from students assigned to repeat work with a teacher under whom they have previously failed. Final approval rests with the principal.

### SUBJECT LOAD

Students in Grades 9-11 are expected to be enrolled in 7 credit subjects or their equivalent. Any variation requires the principal's permission.

### DROPPING SUBJECTS

A student who wishes to drop a subject may do so with the permission of the parents and principal/counselor at any time up to one week after the issuance of the report card for the course for the first marking period.

Such approved dropped courses do not appear on the scholastic record and are not calculated in the grade point average.

There is no assurance that a student who drops a course will be able to add another credit bearing course.

### COURSE CANCELLATIONS

Any elective course that does not have sufficient enrollment in a particular school is canceled. Some courses with low enrollment may be offered in alternate years or not at all.

### ACCESS TO COURSES

As required by federal laws and regulations, the Loudoun County School Board does not discriminate on the basis of gender, color, race, religion, handicapping conditions, or national origin in employment or in its educational programs and activities.

### SUMMER SCHOOL GRADUATION

Students completing graduation requirements in a state-accredited summer school are eligible for diplomas. The last school attended during the regular session awards the diploma.

### ACTIVITY AND ATHLETIC PARTICIPATION

In order to be eligible to participate in any Virginia High School League competition, a student must be currently enrolled in five subjects for credit or the equivalent, and have passed five subjects for credit or the equivalent the previous semester. If a passed course is being repeated, that course may not be counted as one of the five subjects for credit.

Students who are planning to participate in Division I and II interscholastic sports in college should see their school counselors and/or athletic directors to learn about National Collegiate Athletic Association (NCAA) regulations. These rules require certain high school courses, minimum grade point averages, and minimum college admissions testing scores before a student can be found eligible for participation.

### REPORT CARDS

Students receive report cards four times each year. They are issued on the seventh working day for teachers after the end of each nine-week grading period.

Loudoun County Public Schools (LCPS) now offers CLARITY—an on-line parent portal to view student assignments, assessments, resources, and grades. The CLARITY portal is intended to open communication between teachers, students, and parents. Authorization forms requesting access are posted on each school's website.



**INCOMPLETE GRADES**

Teachers may assign “Incomplete” grades in instances where the required assignments have not been submitted due to unusual but excused circumstances. In such cases, the teacher shall assign a deadline for make up of the work; however, the work must be completed by the end of the following grading period.

Incomplete grades may not be carried over from one academic year to another.

**PROMOTION AND CREDIT INFORMATION**

**PROMOTION**

A student must have earned the minimum number of credits listed below to be promoted to the next grade.

A student’s grade level is not subject to change during the school year.

Grade 10	5 credits
Grade 11	11 credits
Grade 12	Student must be scheduled to meet all graduation requirements by June.

**GRADUATION REQUIREMENTS**

Students must meet the graduation requirements based on when they enter the 9<sup>th</sup> grade for the first time.

Requirements for graduation listed in this publication reflect those adopted by the Virginia Board of Education.

**FULL-YEAR COURSES**

Students receive one standard unit of credit for each full-year course successfully completed.

Students do not receive any partial credit for a full-year course. For example, a student who passes a year-long course for a semester but fails for the year or a student who does not continue that subject beyond the first semester does not receive credit for the course; rather, the student must repeat the entire course to obtain credit for it.

Credit is not awarded unless a course is listed in the *Program of Studies*.

**ONE-SEMESTER COURSES**

Students receive one-half unit of credit for each semester course successfully completed.

**NON-CREDIT ACTIVITIES**

A student who serves as a student helper or who is scheduled for study hall, Student Cooperative Association, CAMPUS, PEER Helper program, literary magazine, or video productions does not receive a credit for that class period.

**COURSES ALREADY PASSED**

Students who pass a course may repeat it for grade improvement, but a duplicate credit is not awarded. Both grades are recorded on the student’s transcript and are included when calculating grade point average and class rank.

**CREDITS FROM MIDDLE SCHOOL**

Students who complete Algebra I; Geometry; Algebra II; and/or the regular first, second, or third year of a world language in middle school earn a high school credit for courses in those subjects. Each credit counts toward graduation requirements and is included in the grade point average as well as class rank.

**Reminder To Parents of Rising 9<sup>th</sup> Graders Entering High School:**

The parent of any student who while in middle school took a high school credit-bearing course may elect to have the grade (and credit) omitted from the student’s transcript. If the parent elects to have such a grade omitted, written notice of such election must be given by the parent to the student’s school counselor (rising 7<sup>th</sup> and 8<sup>th</sup> graders) or to the school counseling department of the high school the student will attend (rising 9<sup>th</sup> graders), on or before August 15 of the year in which the student finishes the 8<sup>th</sup> grade. Parents of students eligible to make this election shall be provided written notice thereof and a form to be used for such election when the student receives the final report card from the middle school. (LCPS Policy 5-5.1)

**SEQUENTIAL ELECTIVES**

Students seeking Standard and Modified Standard diplomas must earn at least two electives that are sequential. These must be two electives in one subject area, such as Art I and II and Applied Technology I and II. Students should talk with their school counselors for further details.

### FINE ARTS OR CAREER AND TECHNICAL EDUCATION

A fine arts or career and technical education course is any state-approved course completed in Grades 9–12 in Art, Drama, Newspaper Journalism, NJROTC, Photojournalism, Music, or Career and Technical Education (including Business, Family & Consumer Sciences, Health Occupations, Marketing, Trade and Industrial, and Technology Education).

### LICENSURE AND CERTIFICATION PROGRAMS

Certain programs within Career and Technical Education provide students with an opportunity for professional licensure or certification that can also count as a “student choice” verified credit toward those required for graduation.

To obtain the credit, the student must successfully complete the course sequence that prepares individuals for state licensure or certification and pass the test required by the certifying agency.

Such licenses and certifications provide students a competitive edge in the workplace, offer better opportunities for earning money for college expenses, may provide increased options in military service, and help to define career pathways.

Information about substitute tests is available from the counselors or by going to [www.doe.virginia.gov](http://www.doe.virginia.gov) and clicking on “Graduation Requirements,” then “Substitute Tests for Verified Credit.”

### STANDARD AND VERIFIED CREDITS

A **standard unit of credit** is earned by passing a course with a minimum of 140 clock hours of instruction.

A **verified unit of credit** is earned by passing a course and its related end-of-course Standards of Learning (SOL) test where an end-of-course test is required. Students may repeat end-of-course tests to earn the verified credits needed for graduation.

### SOL TESTS

**SOL TEST** This symbol indicates that the Virginia Standards of Learning test(s) in that subject are administered a few weeks before the conclusion of the course.

SOL tests at the end of certain courses determine whether the student receives a “verified credit,” a certain number of which are required for graduation. The Virginia Board of Education has approved substitute tests and required scores as alternate assessments for certain SOL tests. Detailed information is available from a counselor or by going to [www.doe.virginia.gov](http://www.doe.virginia.gov) and clicking on “Testing and Standards of Learning” and then “Graduation Requirements.”

Using the SOL Blueprints, publications that outline the information measured on the SOL test for each subject, teachers address SOL test information throughout the student’s education in Virginia.

Scores on the SOL tests and approved substitute tests are the major factor in determining a school’s accreditation status.

#### **Courses with End-of-Course SOL Tests:**

Algebra I (administered at the end of Algebra I and Algebra I, Part 2)

Algebra II

Algebra II and Trigonometry

Biology

Chemistry

Earth Science

Geometry

Reading (administered in English 11)

Writing (administered in English 11)

World History and Geography to 1500

World History and Geography, 1500 to Present

United States History

**DIPLOMA CHANGES**

A student must earn a Board-approved career and technical education credential to graduate with a Standard Diploma, beginning with students entering 9<sup>th</sup> grade for the first time in 2013–2014.

A student must successfully complete one virtual course, which may be non-credit bearing, to graduate with either a

Standard or Advanced Studies diploma, beginning with students entering 9<sup>th</sup> grade for the first time in 2013–2014.

The Modified Standard Diploma is folded into the Standard Diploma and applies to students entering 9<sup>th</sup> grade for the first time in the 2013–2014 school year. Credit accommodations will be provided for students with disabilities. Guidelines for credit accommodations will be issued by the Board of Education.

**STANDARD DIPLOMA COURSE REQUIREMENTS**

DISCIPLINE AREA	STANDARD CREDITS: effective with first-time 9 <sup>th</sup> graders in 2003–2004 through 2010–2011	STANDARD CREDITS: effective with first-time 9 <sup>th</sup> graders in 2011–2012 and beyond	VERIFIED CREDITS: effective for first-time 9 <sup>th</sup> graders in 2003–2004 and beyond
English	4	4	2
Mathematics <sup>1</sup>	3	3	1
Laboratory Science <sup>2,6</sup>	3	3	1
History and Social Science <sup>3,6</sup>	3	3	1
Health and Physical Education	2	2	
Fine Arts or Career and Technical Education	1		
World Language, Fine Arts or Career and Technical Education <sup>7</sup>		2	
Economics and Personal Finance		1	
Electives <sup>4</sup>	6	4	
Student Selected Test <sup>5</sup>			1
<b>Total</b>	<b>22</b>	<b>22</b>	<b>6</b>

<sup>1</sup> **For students entering the 9<sup>th</sup> grade for the first time in 2003-2004 through 2010-2011:** 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. The Board may approve additional courses to satisfy this requirement.

**For students entering the 9<sup>th</sup> grade for the first time in 2011-2012 and beyond:** Courses completed to satisfy this requirement shall include at least two different course selections from among: Algebra I; Geometry; Algebra, Functions and Data Analysis; Algebra II; or other mathematics courses above the level of Algebra II. The Board shall approve courses to satisfy this requirement.

<sup>2</sup> **For students entering the 9<sup>th</sup> grade for the first time in 2003-2004 through 2010-2011:** Courses completed to satisfy this requirement shall include course selections from at least two different science disciplines: earth sciences, biology, chemistry, or physics. The Board may approve additional courses to satisfy this requirement.

**For students entering the 9<sup>th</sup> grade for the first time in 2011-2012 and beyond:** Courses completed to satisfy this requirement shall include course selections from at least two different science disciplines: earth sciences, biology, chemistry, or physics or completion of the sequence of science courses required for the International Baccalaureate Diploma. The Board shall approve courses to satisfy this requirement.

<sup>3</sup> **For students entering the 9<sup>th</sup> grade for the first time in 2003-2004 through 2010-2011:** 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. The Board may approve additional courses to satisfy this requirement.

**For students entering the 9<sup>th</sup> grade for the first time in 2011-2012 and beyond:** 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. The Board shall approve courses to satisfy this requirement.

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

<sup>5</sup> **For students entering the 9<sup>th</sup> grade for the first time in 2003-2004 through 2010-2011:** 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.

**For students entering the 9<sup>th</sup> grade for the first time in 2011-2012 and beyond:** 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.

<sup>6</sup> 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 (1) the student-selected verified credit and (2) 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.

<sup>7</sup> **For students entering the 9<sup>th</sup> grade for the first time in 2011-2012 and beyond:** 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.



## ADVANCED STUDIES DIPLOMA COURSE REQUIREMENTS

DISCIPLINE AREA	STANDARD CREDITS: effective with first-time 9 <sup>th</sup> graders in 2003–2004 through 2010–2011	STANDARD CREDITS: effective with first-time 9 <sup>th</sup> graders in 2011–2012 and beyond	VERIFIED CREDITS: effective with 9 <sup>th</sup> graders in 2000–2001 and beyond
English	4	4	2
Mathematics <sup>1</sup>	4	4	2
Laboratory Science <sup>2</sup>	4	4	2
History and Social Science <sup>3</sup>	4	4	2
World Language <sup>4</sup>	3	3	
Health and Physical Education	2	2	
Fine Arts or Career and Technical Education	1	1	
Economics and Personal Finance		1	
Electives	2	3	
Student Selected Test <sup>5</sup>			1
<b>Total</b>	<b>24</b>	<b>26</b>	<b>9</b>

<sup>1</sup> **For students entering the 9<sup>th</sup> grade for the first time in 2003-2004 through 2010-2011:** 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. The Board may approve additional courses to satisfy this requirement.

**For students entering the 9<sup>th</sup> grade for the first time in 2011-2012 and beyond:** Courses completed to satisfy this requirement 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. The Board shall approve courses to satisfy this requirement.

<sup>2</sup> **For students entering the 9<sup>th</sup> grade for the first time in 2003-2004 through 2010-2011:** 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 or completion of the sequence of science courses required for the International Baccalaureate Diploma. The Board may approve additional courses to satisfy this requirement.

**For students entering the 9<sup>th</sup> grade for the first time in 2011-2012 and beyond:** 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 or completion of the sequence of science courses required for the International Baccalaureate Diploma. The Board shall approve courses to satisfy this requirement.

<sup>3</sup> **For students entering the 9<sup>th</sup> grade for the first time in 2003-2004 through 2010-2011:** 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. The Board may approve additional courses to satisfy this requirement.

**For students entering the 9<sup>th</sup> grade for the first time in 2011-2012 and beyond:** 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. The Board shall approve courses to satisfy this requirement.

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

<sup>5</sup> **For students entering the 9<sup>th</sup> grade for the first time in 2003-2004 through 2010-2011:** 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.

**For students entering the 9<sup>th</sup> grade for the first time in 2011-2012 and beyond:** 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.

**MODIFIED STANDARD DIPLOMA COURSE REQUIREMENTS**

*(for certain students entering high school BEFORE the 2013–2014 school year)*

This diploma 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. The student’s Individualized Education Plan (IEP) team and the student’s parents determine eligibility and participation at any point after the student’s 8<sup>th</sup> grade year.

Students may choose to pursue the Standard or Advanced Studies Diploma at any time throughout their high school careers.

Students must earn 20 units of credit and pass literacy and numeracy competency assessments. The following assessments may be used: 8<sup>th</sup> grade English (Reading) and mathematics Standards of Learning tests to meet the literacy and numeracy requirements. The following end-of-course tests may be used as substitutes:

- 8<sup>th</sup> grade English
- Reading/Literature and Research (administered near the end of English 11) may be substituted for the 8<sup>th</sup> grade Reading test
- 8<sup>th</sup> grade Mathematics
- Algebra I, Geometry, or Algebra II may be substituted for the 8<sup>th</sup> grade Math test

DISCIPLINE AREA	STANDARD UNITS OF CREDIT
English	4
Mathematics <sup>1</sup>	3
Laboratory Science <sup>2</sup>	2
History and Social Science <sup>3</sup>	2
Health and Physical Education	2
Fine Arts or Career and Technical Education	1
Electives <sup>4</sup>	6
<b>Total</b>	<b>20</b>

<sup>1</sup> Courses completed to satisfy this requirement shall include content from among applications of algebra, geometry, personal finance, and statistics in courses that have been approved by the Board.

<sup>2</sup> Courses completed shall include content from at least two of the following: applications of earth science, biology, chemistry, or physics in courses approved by the Board.

<sup>3</sup> Courses completed to satisfy this requirement 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 Board.

<sup>4</sup> Courses to satisfy this requirement shall include a least two sequential electives in the same manner required for the Standard Diploma.

**OTHER GRADUATION CERTIFICATES AND DIPLOMAS**

**I.E.P. Diploma**—awarded to students receiving special education services who meet the requirements specified in their Individualized Education Plan (IEP).

**Certificate of Program Completion**—awarded to those regular education students who meet all state requirements for graduation except passing the necessary Standards of Learning tests.

**TRANSFERRING INTO VIRGINIA PUBLIC SCHOOLS AS A HIGH SCHOOL STUDENT**

Each transfer student’s academic record is evaluated to determine the number of standard units of credits that have been earned, as well as to ascertain the remaining number of standard and verified units (see page 2) of credit that a student needs to graduate. The type of diploma a student wishes to pursue determines the total number of standard and verified credits necessary for graduation. Transfer courses which a student completed in a school division prior to enrolling in LCPS are weighted only if those courses are weighted as honors courses in LCPS. Transfer AP and IB courses may be weighted after a school review. For further details about transferring, log on to [www.doe.virginia.gov](http://www.doe.virginia.gov) and click on transfer information under “Graduation Requirements.”

Below is a summary chart of credits needed for graduation. Students should discuss the specific course requirements and course options with the counselor. “Beginning” includes the time from the first day of school until the end of the first twenty hours of instruction. “During” indicates that the student enrolled after the first twenty hours of instruction.

**For Students Who Entered Grade 9 in 2003-2004 or Later**

TIME OF TRANSFER	REQUIRED FOR STANDARD DIPLOMA	REQUIRED FOR ADVANCED STUDIES DIPLOMA
During 9 <sup>th</sup> grade or Beginning of 10 <sup>th</sup>	22 standard units 6 verified units: 1 in Math 1 in Science 2 in English 1 in Social Science 1 Student Selected	24/26 standard units 9 verified units: 2 in Math 2 in Science 2 in English 2 in Social Science 1 Student Selected
During 10 <sup>th</sup> grade or Beginning of 11 <sup>th</sup>	22 standard units 4 verified units: 1 in Math 1 in Science 1 in English 1 in Social Science	24/26 standard units 6 verified units: 1 in Math 1 in Science 2 in English 1 in Social Science 1 Student Selected
During 11 <sup>th</sup> grade or Beginning of 12 <sup>th</sup>	22 standard units 2 verified units: 1 in English 1 Student Selected	24/26 standard units 4 verified units: 1 in English 3 Student Selected
During 12 <sup>th</sup> grade	Students should be given every opportunity to earn a diploma. Counselors work with students to examine options.	

**AWARDS FOR EXEMPLARY STUDENT PERFORMANCE**

The following diploma seals may be awarded to students who demonstrate academic excellence and/or outstanding achievement:

**Governor’s Seal**—for 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 9 transferable college credits in Advanced Placement (AP), International Baccalaureate (IB), Cambridge, or dual enrollment courses

**Board of Education Seal**—for students who are receiving a Standard Diploma or Advanced Studies Diploma with an average grade of “A” or better.

**Board of Education Seal of Advanced Mathematics and Technology**—for students receiving either the Standard or Advanced Studies Diploma who satisfy all of the math requirements for the Advanced Studies Diploma with a “B” average or better **and** either pass an examination in a career and technical education field that confers certification from a recognized industry, trade, or professional association **or** acquire a professional license in a career or technical education field from the Commonwealth of Virginia **or** pass an examination approved by the Virginia Board of Education that confers college-level credit in a technology or computer science area. See a counselor for specifics about the requirements for this seal. If a student is taking a certification examination and will not know the result until after graduation, the student should notify his/her counselor. The seal can be mailed to the student after receipt of successful test results.

**Career and Technical Education Seal**—for students receiving the Standard or Advanced Studies Diploma who 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** pass an examination or an occupational competency assessment in a career and technical education concentration or specialization that confers certification or occupational competency credential from a recognized industry, trade, or professional association **or** acquire a professional license in that career and technical education field from the Commonwealth of Virginia. A student should see a counselor for specifics about the requirements for this seal. If a student is taking a certification examination and will not know the result until after graduation, he/she should notify the counselor. The seal can be mailed to the student after receipt of successful test results.

**Excellence in Civics Education**—for students receiving either the Standard or Advanced Studies Diploma, the seal is designed to reward excellence in civics education and understanding of the state and federal constitutions and the democratic model of government. Students must earn a “B” or higher in Virginia and U.S. History and Government; complete fifty hours of voluntary participation in community service or extracurricular activities with a civics focus and have good attendance and no disciplinary infractions.

Activities that qualify include volunteering for a charitable or religious organization that provides services to the poor, sick, or less fortunate; participating in Boy Scouts, Girl Scouts, or similar youth organizations; participating in political campaigns or government internships, Boys State, Girls State, or Model General Assembly; participating in Junior Reserve Officers’ Training Corps (ROTC); and/or participating in school-sponsored extracurricular activities that have a civics focus. Any student who enlists in the United States military prior to graduation will be deemed to have met the community service requirement.

## GRADE POINT AVERAGE AND CLASS RANK

- Grade point average (GPA) and class rank include all courses for which credit was earned or could have been earned in Grades 9-12. Also included are the “credit-bearing” courses (Algebra I, Parts 1 and 2; Algebra I; Geometry; Algebra II; world language) completed at the middle school level.
- When a course is repeated, both final course grades are included when calculating the GPA and rank.
- Based on their GPA, students are ranked at the beginning of the senior year and at the end of each semester of the senior year.
- If a student withdraws from a course before the end of the eleventh week of the course, the course is not recorded on the scholastic record. All grades earned are recorded on the transcript. Partial credit is not given for year-long courses dropped at the end of the first semester; however, grades earned are included in the determination of grade point average and class rank.
- If a student withdraws from a year-long course after the second week of second semester, a grade of zero is recorded for the remaining grading periods. The final grade is recorded on the scholastic record and included when calculating grade point average and class rank.
- Grades earned in Advanced Placement (AP) courses are “weighted” by adding 1.0 to the point value for the grade earned in a year-long course with the exception of a grade of “F.”
- All year-long Honors (H) courses, all designated Dual Enrollment (DE) courses, and all Academy of Science (AOS) courses are “weighted” by adding 0.5 to the point value for the grade.
- To determine class rank, grade points for all courses for which a grade has been recorded are totaled and divided by the total number of courses for which a student has received a semester or year’s grade.
- A student must be enrolled in a Loudoun County public school for two full semesters in order to be eligible for first and second honor graduate designation (valedictorian or salutatorian).

## GRADING SCALE

*Adopted at the beginning of the 2009-10 school year*

GRADE	NUMERICAL EQUIVALENT	POINTS AWARDED
A+	98-100	4.3
A	93-97	4.0
A-	90-92	3.7
B+	87-89	3.3
B	83-86	3.0
B-	80-82	2.7
C+	77-79	2.3
C	73-76	2.0
C-	70-72	1.7
D+	67-69	1.3
D	63-66	1.0
D-	60-62	0.7
F	59 and below	0.0

## RECOMMENDED TESTING FOR COLLEGE-BOUND STUDENTS

### PSAT—PRELIMINARY SCHOLASTIC ASSESSMENT TEST

Students benefit from practice in taking the test and can identify academic strengths and weaknesses while they have time to work to improve their scores.

Students in the **9<sup>th</sup> and 10<sup>th</sup> grades** can get a “jump on college.” The test shows firsthand the kinds of reading, math, and writing skills needed to succeed in college. It also provides practice for college admissions tests.

Students in the **11<sup>th</sup> grade** can enter special scholarship competitions such as the National Merit Scholarship Qualifying Test, National Achievement Program, and National Hispanic Scholars Program.

PSAT measures verbal and math reasoning skills and writing skills.

This test is administered at all high schools on the national test date. The PSAT includes a writing component but does not include an essay.

### SAT REASONING TEST

Students in the 11<sup>th</sup> and 12<sup>th</sup> grades should take the SAT Reasoning Test which measures critical reading, mathematics, and writing skills. A student should begin taking the test by the spring of the 11<sup>th</sup> grade and may repeat the test several times.

Most colleges use the highest critical reading, math, and writing scores obtained, even if the three sub-scores were earned on separate days. Many colleges have indicated that they plan to require applicants to present writing scores.

The SAT tests are given several times each year at high schools in Loudoun County. Students must register about six weeks in advance of the test. Students may register on-line at [www.collegeboard.com](http://www.collegeboard.com). On-line registration allows students to learn whether space exists for testing at their preferred test center.

Registration bulletins for the test are also available in the school counseling office, and registration forms must be mailed along with payment to the College Board.

Free study and preparation materials are available at [www.collegeboard.com](http://www.collegeboard.com) and from the school counseling office.

### AP—ADVANCED PLACEMENT

AP examinations are administered in the spring on nationally standardized dates and measure the student’s knowledge in specific subject areas.

AP courses, taught by dedicated and committed high school teachers, lay the groundwork for students to succeed on AP examinations. In LCPS, all students enrolled in AP classes are encouraged to complete the AP experience by taking the examinations near the end of the AP class.

The student’s transcript reflects the AP designation independent of the student’s election to take the AP exam. All final grades are “weighted” by 1.0 if the student passes the course.

Students who elect to take an AP exam without taking the course may have their scores sent to the colleges to which they apply; however, units of credit are awarded only to those students who complete the related AP courses.

### SAT SUBJECT TESTS

Subject tests measure students’ knowledge and skills in a particular subject and their ability to apply that knowledge. Tests are offered in many subjects.

The test should be taken towards the end of the completion of a subject. For example, if a student is completing Chemistry in Grade 11, he/she should take the SAT Subject Test in Chemistry in the spring of the 11<sup>th</sup> grade.

Not all colleges require SAT Subject Tests; generally, the most competitive schools request these tests. Students should check test requirements with colleges in which they have interest.

Students may register for up to three tests in one day. The tests are given on the same dates as certain SAT Reasoning Tests.

Registration materials are available in the counseling office. “SAT Subject Test Preparation Booklet,” a free booklet, available in the school counseling office and on-line at [www.collegeboard.com](http://www.collegeboard.com), provides information about the tests and sample test questions.

### ACT—AMERICAN COLLEGE TEST

The ACT measures academic achievement in English, mathematics, reading, and science reasoning. A writing test is optional. Students should check with specific colleges to see whether the schools of interest prefer ACT or SAT and should be sure to check whether a writing test is required. Registration materials and study guides are available on line at [www.act.org](http://www.act.org) and in the counseling office.

Some students find it helpful to take both the ACT and SAT since colleges generally use the best scores on either test.

### TOEFL—TEST OF ENGLISH AS A FOREIGN LANGUAGE

The TOEFL measures a student’s ability to read, write, and understand English. Students who are applying to college and for whom English is a second language can demonstrate their ability to use English. Some colleges require this test for second language speakers. Some colleges will accept the SAT Subject Test in English as a Second Language instead of the TOEFL.

### ENGLISH LANGUAGE PROFICIENCY TEST: ACCESS

ACCESS measures understanding of spoken and written standard American English and the ability to use English in the classroom and in daily life. It is designed for students who are not native speakers of English and/or whose best language is not English and/or who usually speak a language other than English at home or at work. The test concentrates on academic and practical use of English.



## SPECIAL PROGRAMS

### ADVANCED PLACEMENT

The Advanced Placement Program, often known as “AP,” is a cooperative education endeavor with the College Board. AP courses allow students the opportunity to take college-level courses while they are enrolled in high school. Students who enroll in an AP course should expect extensive reading, writing, and critical thinking which generally require additional time.

In the spring students are encouraged to take the nationally standardized AP examinations. Colleges may award academic credit and/or special placement if a student earns a qualifying score on the exam. AP final grades are “weighted” by adding 1.0 to the point value for the grade if the student passes the course.

#### BENEFITS OF AP CLASSES

GAIN THE EDGE IN COLLEGE PREPARATION	STAND OUT IN THE COLLEGE ADMISSIONS PROCESS	BROADEN INTELLECTUAL HORIZONS
<ul style="list-style-type: none"> <li>■ Get a head start on college-level work.</li> <li>■ Improve writing skills and sharpen problem-solving techniques.</li> <li>■ Develop the study habits necessary for tackling rigorous course work.</li> </ul>	<ul style="list-style-type: none"> <li>■ Demonstrate maturity and readiness for college.</li> <li>■ Show willingness to push self academically.</li> <li>■ Emphasize commitment to academic excellence.</li> </ul>	<ul style="list-style-type: none"> <li>■ Explore the world from a variety of perspectives.</li> <li>■ Study subjects in greater depth and detail.</li> <li>■ Assume the responsibility of reasoning, analyzing, and understanding for one’s self.</li> </ul>

### AVID

AVID, or Advancement via Individual Determination, is a national program targeting students in the “academic middle”—“B,” “C,” and even “D” students—who have the desire to go to college and the willingness to work hard in rigorous high school courses. AVID students enroll in honors and Advanced Placement courses and an AVID elective course. During this elective class, students learn organizational and study skills, work on building critical thinking skills, receive academic help from peers and tutors, and participate in enrichment and motivational activities. AVID students are expected to enroll in the AVID elective course each year of high school.

### CLASSROOM DRIVER EDUCATION

Transfer students, students who failed the Driver Education portion of Health and PE 10, or students who have taken and passed Driver Education but failed the Department of Motor Vehicles written test after passing the 36-hour course, must re-take the classroom portion of Driver Education. *Students should take a state-approved Classroom Driver Education course on-line* (i.e., <http://www.vadriveredu.org/login/index.php>). An additional requirement of classroom Driver Education for all students is a 90-minute Parent/Teen presentation, that is offered at every high school.

### DUAL ENROLLMENT

Students may take advantage of a program that allows them to meet the requirements for high school graduation while simultaneously earning college credits. In all cases, students must receive prior written approval by the participating high school and the college for particular courses to be taken.

Dual Enrollment icons appear throughout the *Program of Studies* where formal agreements exist between LCPS and colleges for dual enrollment options. Students who wish to enroll in other college courses where formal agreements do not exist should discuss options with the high school counselor.

### ENGLISH LANGUAGE LEARNERS (ELL)

Provisions are made for those students who need English as a Second Language instruction. Additional information is available from counselors. If the ELL program is located in a school other than the “home school,” transportation is provided to and from the designated sites for students.

In some situations, the student may need more than four years to complete credits needed for graduation from high school. The counselor can advise students and parents about planning the program of studies needed for graduation. Further information is available in the ELL section of the *Program of Studies*.

### INDIVIDUALIZED EDUCATION

Provisions are made for individualized education for students with identified disabilities. These include programs for students who are learning disabled, emotionally disabled, intellectually disabled, other health impaired, hearing impaired, speech impaired, visually impaired, or physically impaired. Individualized Education Plans (IEPs) specify individual accommodations.

### LCPS ACADEMY OF SCIENCE (AOS)

The mission of the LCPS Academy of Science is to provide an academic environment where students are encouraged to develop creative scientific endeavors of their own design, while having the opportunity to pursue a rich, well-rounded high school experience.

AOS students are selected through an application process. Rising 9<sup>th</sup> grade students are invited to attend after a competitive process that evaluates test scores, academic achievements, writing samples, teacher recommendations, and self-reported interests and activities.

Student motivation and interest in science are the most valuable characteristics of AOS students.

AOS courses are “weighted” by adding 0.5 to the point value for the grade.

## **MONROE TECHNOLOGY CENTER AND THE LOUDOUN GOVERNOR'S CAREER AND TECHNICAL STEM ACADEMY**

Students seeking highly technical and specialized instructional programs can obtain industry-level certification and/or licensure through the programs at **Monroe Technology Center**.

These programs allow students to pursue special interest areas and to receive industry-standard training that can lead to post-secondary educational opportunities or to a direct pathway into the workplace.

Students attend Monroe Technology Center on alternating days. Transportation is provided.

The **Loudoun Governor's Career and Technical STEM Academy** is housed at Monroe Technology Center. The Academy focuses on four career clusters and five pathway initiatives that are aligned with regional and state work force demands. The four specific career cluster areas are: Agriculture, Food, and Natural Resources with a pathway in Plant Systems; Health Sciences with pathways in Diagnostic Services and Therapeutic Services; Science, Technology, Engineering, and Mathematics with a pathway in Engineering Technology; and Transportation, Distribution, and Logistics with a pathway in Facility and Mobile Equipment Maintenance.

Academy goals and performance measures include:

- Improve academic achievement of Academy students by increasing academic rigor and relevance within selected career pathways.
- Increase completion of dual enrollment college coursework.
- Provide workplace readiness experiences through strong partnerships with businesses.
- Increase high school graduation rates.
- Reduce drop out rates.
- Increase enrollment and retention in postsecondary education.
- Increase the proportion of students completing a college- and workplace-ready curriculum in high school.
- Reduce the proportion of students requiring remediation in college.
- Increase the number of industry certifications awarded to high school students.
- Increase the number of graduates employed in high-wage, high-skilled careers.

Highlights of the academy program include:

- Dual enrollment opportunities are available through Northern Virginia Community College. *Future dual enrollment and college credit opportunities will be discussed with other educational institution partners such as the George Washington University and Shenandoah University.*
- Academy students receive enhanced science, technology, engineering, and mathematics (STEM) instruction via staff development opportunities with universities/colleges throughout the Commonwealth and curriculum enhancements. Partnerships with the Loudoun Academy of Science, as well as advisory and planning committee member participation, also support these efforts.
- The Health Science cluster pathways contain two new and innovative pathway programs. The Medical Laboratory Technology and Radiology Technology pathway programs have been developed through the support and partnership of the Claude Moore Charitable Foundation and the Inova

Healthcare System. Loudoun County initiated the curriculum development within these Health Science areas in partnership with the Career and Technical Education Resource Center and the Virginia Department of Education.

- The Agriculture, Food, and Natural Resources Plant Systems pathway is aligned with the global movement to develop more green technologies and practices to conserve and protect the earth's natural resources.
- The Transportation, Distribution, and Logistics Facility and Mobile Equipment Maintenance pathway provides direct instruction in the development and maintenance of alternative fuels and hybrid vehicles.

## **ON-LINE COURSE OPPORTUNITIES**

A student may apply for enrollment in selected high school credit courses if space is available with the approval of school guidance staff and the school's Principal. An on-line form is posted on the LCPS website or parents can contact their school's guidance office for the course application. Enrollment is subject to approval and space is limited. The completed application must be submitted to the home school's counselor. Enrollment is contingent upon final approval from the on-line coordinator, and families will be notified.

## **SCHEDULED EARLY DISMISSAL**

All students are to be enrolled in school for the full school day. Students enrolled in cooperative education programs may be granted an early dismissal as long as they are enrolled in five credit subjects or their equivalent.

In cases of extreme hardship, a junior or senior must obtain from the principal an application for early dismissal that is submitted to the Superintendent or his designee for approval.

## **SENIOR YEAR PLUS**

The Senior Year Plus initiative is designed to help better prepare highly motivated students for life after high school. While a high school diploma is a minimum credential for any career, college degrees or other career credentials mean better paying jobs. The program encourages seniors to make the most of their senior year.

Two programs comprise the Senior Year Plus Initiative:

### **1. Early College Scholars**

### **2. Path to Industry Certification**

The **Early College Scholars** program allows students to commit to earning a full semester of college credit before leaving high school. Students may earn the credits through a combination of Advanced Placement and dual enrollment courses. Students become "Early College Scholars" by meeting the qualifications and signing an agreement with their school counselor.

To qualify a student must

- Have a "B" or better average,
- Be pursuing an Advanced Studies Diploma,
- Be completing or have completed college-level coursework such as Advanced Placement or dual enrollment equal to at least 15 transferable college credits.

Students in the program may also register for televised and on-line Virtual Advanced Placement classes not offered by LCPS with prior approval.



Early College Scholars receive a diploma seal and certificate from the Governor recognizing their achievement. *To register, students and their parents should talk with their school counselor near the end of the junior year.*

The **Path to Industry Certification** is designed for students who plan to continue working on their high school diploma while concurrently pursuing technical training for a selected industry certification. Often this industry certification continues after high school graduation.

Typically, students continue to take industry-specific training at their local community college or Monroe Technology Center during the summer and fall after graduation. Up to one semester of technical training is available to students tuition-free in the same calendar year after high school graduation as long as that semester allows them to complete the certification program.

### THOMAS JEFFERSON HIGH SCHOOL FOR SCIENCE AND TECHNOLOGY (TJHSST)

TJHSST students are selected on the basis of aptitude and interest in the biological, physical, mathematical, and computer science fields. Since this Governor's School for Science and Technology is located in Northern Virginia, the school serves qualified applicants from several area school districts, including Loudoun County.

Students are selected to attend in a competitive process that evaluates admission test scores, academic achievement, personal essays, teacher recommendations, and self-reported interests and activities. Approximately 10% of the applicants are accepted. Most students enter as 9<sup>th</sup> graders. Replacements are selected for vacancies at the 10<sup>th</sup> grade level only.

### WORLD LANGUAGE CREDIT FOR ENGLISH LANGUAGE LEARNERS

Speakers of English as a second language should confer with their counselors regarding a sequence of world language study that can lead to an Advanced Studies Diploma.

## SELECTION OF COURSES

All students should choose challenging classes that maximize their learning opportunities. Rigorous high school courses prepare students well for further education and successful careers.

Parents and students should consider the following when making decisions about which group to choose:

- previous performance in subject area,
- standardized test scores,
- commitment of the student, and
- recommendations from teachers, counselors, and principals.

The applicable Virginia Standards of Learning (SOL) are incorporated in all classes.

**Honors and AP**—Course content is rapidly paced with additional depth. Lessons are often designed to be complex, abstract, and open-ended.

**Academic**—Course content and expected student performance require additional reading and writing at a rigorous level.

**Grade Level**—Course content challenges students to master rigorous standards while providing individualized support.

## STEPS TO READING AND USING THE PROGRAM OF STUDIES

### 1 Select a Career Cluster/Path

- Choose a career cluster/path that closely relates to your interests, skills, values, and strengths.
- Explore occupations that relate to your skills.
- Learn what education, skill, and knowledge are required.

### 2 Decide Your Diploma Type

- Advanced Studies
- Standard
- Modified Standard

### 3 Choose Courses that Relate to Your Career Path and Diploma Choice.

**DUAL ENROLLMENT AGREEMENTS**

**BACKGROUND OF AGREEMENTS**

Loudoun County Public Schools has joined with Northern Virginia Community College (NOVA) and Shenandoah University to develop programs that allow qualified students to gain advanced standing in specific career and technical areas. Other areas of study have agreements with NOVA and other colleges for dual enrollment credit. The intent of the dual enrollment agreements is to provide opportunities for career ladder advancement through recognition of previous learning.

Students must demonstrate mastery of college-level skills gained through a rigorous high school program. This arrangement often means that students can enter the work force and/or pursue a college degree without loss of time or credit. Also, they avoid unnecessary duplication of effort.

The specific dual enrollments are mentioned in this booklet. Counselors and teachers in those subjects can provide information about specific requirements, credits, and application procedures. They are also available to answer questions and to discuss the programs and the opportunities the dual enrollment courses provide. Eligible students receive college credit on an official college transcript.

*Dual enrollment is available for 11<sup>th</sup> and 12<sup>th</sup> grade students who meet minimum requirements on placement tests. In some cases, 10<sup>th</sup> grade students may apply for a grade level exception by meeting criteria established by the college and/or university.*

**ICON BESIDE COURSES**



Loudoun Governor's Career and Technical STEM Academy



James Madison University



Northern Virginia Community College



Shenandoah University

*The icons shown above appear beside courses for which dual enrollment college credit exists and appear throughout the Program of Studies.*

**ADMINISTRATION OF JUSTICE**



An eligible student who completes Administration of Justice I and II at Monroe Technology Center with a "B" or better in each course can receive up to 15 credits for ADJ 100, ADJ 211, and ADJ 236 in Administration of Justice I and ADJ 216 and ADJ 237 in Administration of Justice II.

**AUTO SERVICING TECHNOLOGY**



An eligible student who completes Automotive Servicing Technology I and II at Monroe Technology Center with a "B" or better in each course can receive up to 26 credits. Automotive Servicing I students can earn 4 credits for AUT 266, 4 credits for AUT 241, and 4 credits for AUT 242. Automotive Servicing II students can earn 2 credits for AUT 100, 4 credits for AUT 265, 4 credits for AUT 141, and 4 credits for AUT 142.

**COMPUTER & DIGITAL ANIMATION**



The qualifying student who completes Computer & Digital Animation at Monroe Technology Center with a "B" or better can receive 3 credits each for CAD 238, CAD 239, and ARC 123 for a total of 9 credits.

**COMPUTER INTEGRATED ENGINEERING & DESIGN**



The qualifying student who successfully completes the Computer Integrated Engineering & Design Program at Monroe Technology Center will receive 3 credits each in CAD 238, EGR 115, and CAD 239 for a total of 9 credits.

**COMPUTER SYSTEMS TECHNOLOGY**



The student who successfully completes the Computer Systems Technology Program at Monroe Technology Center with a "B" or better will receive 3 college credits each from NOVA in ITN 106, ITN 107, INT 101, ITE 180, and ITE 182 for a total of 15 credits.

**EMERGENCY MEDICAL TECHNICIAN (EMT)**



The qualifying student who successfully completes Emergency Medical Technician (EMT) at Monroe Technology Center with a "B" or better can receive 3 credits for EMS 111 Emergency Medical Technician, 3 credits for EMS 120 Emergency Medical Technician-Clinical, and 1 credit for HLT 105 CPR for a total of 7 credits.

**ENVIRONMENTAL PLANT SCIENCE**



The qualifying student who completes Environmental Plant Sciences at Monroe Technology Center and successfully meets the requirements of the course can receive advanced placement in the two-year program Agriculture Technology program at Virginia Tech and/or receive 3 credits each from NOVA for HRT 100 Introduction to Horticulture, HRT 115 Plant Propagation, and HRT 121 Greenhouse Crop Production 1.

**FIREFIGHTER**



The qualifying student who successfully completes Firefighter at Monroe Technology Center with a "B" or better can receive 3 credits for FST 100 Principles of Emergency Services, 3 credits for FST 111 Hazardous Material Response, and 1 credit for HLT 105 CPR for a total of 7 credits.

### **INTRODUCTION TO HEALTH AND MEDICAL SCIENCES**



The qualifying student who completes Introduction to Health and Medical Sciences at Monroe Technology Center with a “B” or better can receive 3 credits for HIM 111 and 1 credit for HLT 105 CPR for a total of 3 credits.

### **MEDICAL LABORATORY TECHNOLOGY**



The qualifying student who completes Medical Laboratory Technology I at Monroe Technology Center with a “B” or better can receive 2 credits for MDL 100.

### **RADIOLOGY I**



The qualifying student who completes Radiology I at Monroe Technology Center with a “B” or better can receive 2 credits for RAD 100.



### **TEACHER CADET PROGRAM**

The student who completes Teacher Cadet will receive 4 elective credits from Shenandoah University that may be transferred to any college or university.

*Successful individuals in all careers should be able to work as part of a team, accept responsibility, read and understand complex information, communicate well in writing and speaking, accurately perform calculations, proficiently use computers to process information, and record and interpret data.*

## **CAREER CLUSTERS**

A Career Cluster is a grouping of occupations and broad industries based on commonalities. Career clusters include:

### **AGRICULTURE, FOOD & NATURAL RESOURCES**

*Food Products and Processing Systems; Plant Systems; Animal Systems; Power, Structural and Technical Systems; Natural Resource Systems; Environmental Service Systems; Agribusiness Systems*

### **ARCHITECTURE & CONSTRUCTION**

*Design/Pre-Construction; Construction; Maintenance/Operations*

### **ARTS, AV TECHNOLOGY & COMMUNICATIONS**

*Audio and Video Technology and Film; Printing Technology; Visual Arts; Performing Arts; Journalism and Broadcasting; Telecommunications*

### **BUSINESS, MANAGEMENT & ADMINISTRATION**

*General Management; Business Information Management; Human Resources Management; Operations Management; Administrative Support*

### **EDUCATION & TRAINING**

*Administration and Administrative Support; Professional Support Services; Teaching/Training*

### **FINANCE**

*Securities and Investments; Business Finance; Accounting; Insurance; Banking Services*

### **GOVERNMENT & PUBLIC ADMINISTRATION**

*Governance; National Security; Foreign Service; Planning; Revenue and Taxation; Regulation; Public Management and Administration*

### **HEALTH SCIENCE**

*Therapeutic Services; Diagnostic Services; Health Informatics; Support Services; Biotechnology Research and Development*

### **HOSPITALITY & TOURISM**

*Restaurants and Food/Beverage Services; Lodging; Travel and Tourism; Recreation, Amusements and Attractions*

### **HUMAN SERVICES**

*Early Childhood Development and Services; Counseling and Mental Health Services; Family and Community Services; Personal Care Services; Consumer Services*

### **INFORMATION TECHNOLOGY**

*Network Systems; Information Support and Services; Web and Digital Communications; Programming and Software Development*

### **LAW, PUBLIC SAFETY, CORRECTIONS & SECURITY**

*Correction Services; Emergency and Fire Management Services; Security and Protective Services; Law Enforcement Services; Legal Services*

### **MANUFACTURING**

*Production; Manufacturing Production Process Development; Maintenance, Installation and Repair; Quality Assurance; Logistics and Inventory Control; Health, Safety, and Environmental Assurance*

### **MARKETING, SALES & SERVICE**

*Marketing Management; Professional Sales; Merchandising; Marketing Communications; Marketing Research*

### **SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS**

*Engineering and Technology; Science and Mathematics*

### **TRANSPORTATION, DISTRIBUTION, INTRODUCTION TO BUSINESS & MARKETING, & LOGISTICS**

*Transportation Operations; Logistics Planning and Management Services; Warehousing and Distribution Center Operations; Facility and Mobile Equipment Maintenance; Transportation Systems/Infrastructure Planning, Management and Regulation; Health, Safety, and Environmental Management; Sales and Service*

**ELECTIVES**

Electives are subjects not required in any area of the curriculum. Students should look at the sample career paths for related high school courses.

Students should select courses that provide them with a well-rounded education. Some courses may not be necessary in a particular career; however, the skills and information learned in those courses may provide greater understanding and appreciation and may increase one’s quality of life.

Either the Technical Specialization or two Career and Technical Education Electives in the same area would count as sequential electives.

**CAREER AND TECHNICAL EDUCATION SPECIALIZATION COURSES**

Technical Specialization Courses are those which provide students with specialized training and work force skills. Students are prepared to enter directly into the work place and to pursue further education and training after high school.

Electives in career and technical education areas—business and information technology, family and consumer sciences, health occupations, marketing, technology education, and trade and industrial education—prepare students for technical specialization at the high school or at Monroe Technology Center.

**ECONOMICS AND PERSONAL FINANCE—  
A NEW GRADUATION REQUIREMENT FOR THE CLASS OF 2015.**

The Virginia Board of Education has added a new requirement for high school graduation. Students who enter 9<sup>th</sup> grade in 2011-2012 and beyond must successfully complete a 1-credit course in Economics and Personal Finance. In Loudoun County, students are able to fulfill this requirement between the sophomore year and the completion of the senior year. LCPS offers a 0.5-credit, semester course in Personal Finance, and a 0.5-credit, semester course in Economics. Students must complete both 0.5-credit courses before their expected graduation date.

*Alternatively,* students may take Personal Finance for a semester, and then take AP Economics as a *full-year course* during their junior or senior years. If students choose this AP option, they **MUST** complete a semester of Personal Finance, *and* a FULL YEAR of AP Economics (Micro and Macro).

**SAMPLE FOUR-YEAR PLAN OF STUDIES FOR  
STANDARD DIPLOMA AND CAREER PREPARATION**

*Students should choose electives based on their career cluster, career goals, and requirements for entry to further education.*

**GRADE 9**

COURSE	CREDIT
English 9	1
World History/Geography to 1500	1
Algebra I	1
Health/PE 9	1
Earth Science	1
Elective	1
Career and Technical Education Elective	1
<b>Total Credits</b>	<b>7</b>

**GRADE 10**

COURSE	CREDIT
English 10	1
World History/Geography 1500 to Present	1
Geometry	1
Health/PE 10	1
Biology	1
Elective (or: Class of 2015: Economics and Personal Finance)	1
Career and Technical Education Elective	1
<b>Total Credits</b>	<b>7</b>

**GRADE 11**

COURSE	CREDIT
English 11	1
U.S. and Virginia History	1
Algebra II or Functions	1
Chemistry or Physics	1
Career and Technical Education Specialization Course	3
<b>Total Credits</b>	<b>7</b>

**GRADE 12**

COURSE	CREDIT
English 12	1
U.S. and Virginia Government	1
Elective (or: Class of 2015: Economics and Personal Finance)	1
Elective	1
Career and Technical Education Specialization Course	3
<b>Total Credits</b>	<b>7</b>

### SAMPLE FOUR-YEAR PLAN OF STUDIES FOR ADVANCED STUDIES DIPLOMA AND CAREER PREPARATION

GRADE 9	
COURSE	CREDIT
English 9	1
World History/Geography to 1500	1
Algebra I	1
Health/PE 9	1
Earth Science	1
World Language I	1
Career and Technical Education Elective	1
<b>Total Credits</b>	<b>7</b>
GRADE 10	
COURSE	CREDIT
English 10	1
World History/Geography 1500 to Present	1
Geometry	1
Health/PE 10	1
Biology	1
World Language II	1
Career and Technical Education Elective (or: Class of 2015 and beyond: Economics and Personal Finance)	1
<b>Total Credits</b>	<b>7</b>
GRADE 11	
COURSE	CREDIT
English 11	1
U.S. and Virginia History	1
Algebra II	1
Science	1
World Language III	1
Career and Technical Education Specialization Courses (or: Class of 2015 and beyond: Economics and Personal Finance + Elective)	2
<b>Total Credits</b>	<b>7</b>
GRADE 12	
COURSE	CREDIT
English 12	1
U.S. and Virginia Government	1
Advanced Functions and Modeling	1
Science	1
Career and Technical Education Specialization Courses (or: Class of 2015 and beyond: Economics and Personal Finance + 2 Electives)	3
<b>Total Credits</b>	<b>7</b>

### SAMPLE FOUR-YEAR PLAN OF STUDIES FOR ADVANCED STUDIES DIPLOMA AND VERY COMPETITIVE COLLEGE

This sample plan depicts a very rigorous program of studies, beginning in the 7<sup>th</sup> grade. While it is extremely demanding, students and parents need to realize that many very competitive colleges actually accept students with fewer rigorous classes; however, strength of the curriculum is a major component in college admissions decisions.

Students should select a balance of classes that they can manage without undue stress. Colleges seek well-rounded students who have succeeded in school as well as in the community and with their peers.

Students should talk with a counselor, teachers, and parents for assistance in determining the best plan.

GRADE 9	
COURSE	CREDIT
English 9	1
World History/Geography to 1500	1
Algebra I (in Grade 8)	1
Geometry	1
Health/PE 9	1
Earth Science	1
World Language I (in Grade 7)	1
World Language II (in Grade 8)	1
World Language III	1
Elective	1
<b>Total Credits</b>	<b>10</b>
GRADE 10	
COURSE	CREDIT
English 10	1
AP World History	1
Algebra II/Trigonometry	1
Health/PE 10	1
Biology	1
World Language IV	1
Elective (or: Class of 2015 and beyond: Economics and Personal Finance)	1
<b>Total Credits</b>	<b>7</b>
GRADE 11	
COURSE	CREDIT
English 11 AP	1
AP U.S. History	1
Mathematical Analysis	1
Chemistry or Physics	1
World Language V	1
Fine Arts or Career and Technical Education	1
Elective (or: Class of 2015 and beyond: Economics and Personal Finance)	1
<b>Total Credits</b>	<b>7</b>
GRADE 12	
COURSE	CREDIT
English 12 AP	1
AP U.S./Comparative Government	1
AP Calculus—BC	1
Physics or AP Science or Ind. Science Research	1
AP World Language (beginning with class of 2013)	1
Electives (or: Class of 2015 and beyond: Economics and Personal Finance + Elective)	2
<b>Total Credits</b>	<b>7</b>



**ART**

**Art I** **240000**  
 Grades 9-12 Credit: 1  
 Prerequisite: None

A wide variety of experiences enhance the basic foundation of art-related knowledge, skills, and ideas developed in middle school. Students explore ideas, materials, and techniques through creative and critical problem solving. Students engage in the process of art criticism and aesthetic critiques. Class discussion includes both critiques of their own pieces and the work of other artists. Students maintain a portfolio to record their progress.

The course incorporates art history, art criticism, aesthetics, and art production to include experiences with drawing, painting, sculpture, printmaking, ceramics, photography, and computer graphics. The instructor encourages students to make connections between the visual arts and other subject areas.

**Art II** **241000**  
 Grades 10-12 Credit: 1  
 Prerequisite: Art I

Students work with more advanced techniques, media, concepts, and ideas. Focus is on the connection between studio production and personal expression. Students begin to develop and refine personal technique and style through the study of art history, art criticism, and aesthetics in relation to studio production.

Students continue to add to their portfolios. Units of study allow for more in-depth study of various media and the creative process. Units provide a balance of two- and three-dimensional experiences.

**Art III** **242000**  
 Grades 11-12 Credit: 1  
 Prerequisite: Art II or Art I and 2 semester courses

Students enhance and refine their personal techniques and styles through the further study of art history, art criticism, and aesthetics in relation to studio production. They begin to take the initiative for generating and designing studio assignments using advanced techniques, media, and concepts.

Through the synthesis of art production, art history, art criticism, and aesthetics, students focus on the relevance of art throughout history and in their own lives. Students continue to develop their portfolios for use in demonstrating their progress and as an effective college entrance asset.

During second semester, interested art students should consult with their instructor about requirements for the AP studio art portfolio.

**Art IV** **243000**  
 Grade 12 Credit: 1  
 Prerequisite: Art III

Art IV provides the advanced student with opportunities to initiate and design studio units of study. With the instructor's guidance and consultation, students work in a variety of media as they pursue individual creative and expressive ideas.

They continue to enhance and refine personal techniques and style through further study of art history, art criticism, and aesthetics. They also further develop their portfolios. Options for study and employment in the arts after high school are discussed. Presentations by local art professionals and visits to museums further the students' art appreciation and understanding.

**Studio Art** **249100**  
**Advanced Placement, weighted 1.0** Credit: 1  
 Grade 12  
 Prerequisite: Art III

Within the Art IV class setting, motivated advanced art students may choose to complete the AP Studio Art portfolio, following AP guidelines. Developing the portfolio involves extensive additional studio time devoted to connecting critical thinking and the conceptual skills to expressive studio technique.

The portfolio requires numerous works within either drawing, 2-dimensional design, or 3-dimensional design. Also, students work with their art teacher to capture digital images of their artworks that adhere to the image submission requirements.

The portfolio is an excellent opportunity for students to develop an effective college or university, art school, or art-related employment application tool.

Students have the opportunity to take the AP Studio Art Portfolio Exam in May with the possibility of earning college credit.

**Survey of Art and Architecture History I** **247700**  
 Grades 9-12 Credit: 0.5  
 Prerequisite: None

Students study art and architecture and their historic impact on society from prehistoric time through the Renaissance. The course leads students to a heightened awareness of and appreciation for the interaction between social, scientific, and philosophical developments in past societies and the art and architecture that these societies produced.

Students have opportunities to experience related studio activities and to use research skills as they prepare reports and presentations.

**Survey of Art and Architecture History II** **248700**  
 Grades 9-12 Credit: 0.5  
 Prerequisite: None

Students study art and architecture from the Renaissance through the 21<sup>st</sup> century. Students compare and contrast their own culture with those cultures and societies of the past in terms of economic, social, and scientific factors.

Students experience related studio activities and use research skills as they prepare reports and presentations.



**Drawing and Painting****231700**

Grades 10-12

Credit: 0.5

Prerequisite: Art 1

This semester-long course allows participants an opportunity to explore drawing and painting as a method for investigating and recording the visual and imagined world. Varied media, styles, and methods are discovered as students learn to sharpen their observational skills. The drawing component encompasses an understanding of the basic elements of drawing: line, mark, tone, value, scale, and space. The painting component explores the basic elements of painting: color, shape, space, tone, value, and mark. Both drawing and painting allow students expressive and imaginative ideas to meld with the observable world. Historic and contemporary artists of diverse cultural backgrounds are presented to establish a connection with students' own drawing and painting. Students maintain a sketchbook/journal through the semester as a record of learning and as a container for recording, imagining, and self-expression.

**Photography****245700**

Grades 10-12

Credit: 0.5

**Photography****245600**

Grades 10-12

Credit: 1

Prerequisite: Art I

The photography course is designed to serve as an introduction to black and white and digital photography. The class is offered to those students who have completed Art I, at a minimum, in order to assure that students have a background in basic design and composition. Students learn about the workings of a 35mm single lens reflex camera, the chemistry of film and print development, digital photography, and the aesthetics of quality compositional photographs. Students work in Adobe Photoshop to artistically alter and augment photos. Some history of photography is also introduced. It is desired, although not required, that students provide their own cameras.

Students may select a full-year OR one-semester course in Photography. The full-year course includes more in-depth instruction and experience.

**Sculpture****244700**

Grades 10-12

Credit: 0.5

Prerequisite: Art I

Sculpture is designed to provide an opportunity for students to explore the fundamentals of three-dimensional design and to work with a variety of traditional and new materials. Emphasis is placed on creating works that translate personal expression as well as good sound design and studio techniques.

Students' work is enhanced by an exploration of the contribution of major sculptors and their influences on the world of sculpture.

A minimum of Art I is required to assure that students possess background in basic design and composition.

## BUSINESS & INFORMATION TECHNOLOGY

*The Future Business Leaders of America (FBLA) is the career and technical education student organization for all individuals enrolled in business courses. The activities of FBLA are an integral part of the business program and are designed to enhance the business course offerings.*

**Industry Certifications:** The Business & Information Technology curriculum offers students the following industry certifications: MOS Word, MOS Excel, MOS PowerPoint, MOS Access, Certified Internet Webmaster (CIW), and Internet Computing Core (IC3).

**Introduction to Business & Marketing****821000**

Grades: 9-11

Credit: 1

Prerequisite: None

This entry-level course is offered for all students and recommended as an introduction to the career preparation program in Business & Marketing Education.

Students explore the role of business and marketing in the free enterprise system and the global economy and apply decision-making skills as consumers, employees, and citizens.

Communication and interpersonal skills are developed through various activities.

**Keyboarding****826000**

Grades 9-12

Credit: 0.5

Prerequisite: None

This course is designed for secondary school students to develop and enhance touch skills for entering alphabetic, numeric, and symbol information on a keyboard. Students compose and produce personal, educational, and professional documents. (Students who can demonstrate touch keyboarding skills may test out and enter Advanced Keyboarding to develop document preparation skills.) This course is designed for students who have never taken a keyboarding class.

**Advanced Keyboarding****829700**

Grades: 9-12

Credit: 0.5

Prerequisite: Keyboarding or Keyboard Proficiency

This course is designed for secondary school students to 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.

**Computer Information Systems** **828001**  
 Grades 9-12 Credit: 1  
 Prerequisite: Keyboarding or Keyboard Proficiency

Computer Information Systems provides students with opportunities to develop professional level skills in a project-oriented approach through the use of the Microsoft Office software package.

Students apply problem-solving skills to real-life situations through word processing, spreadsheets, databases, multimedia presentations, and integrated software activities. Students work individually and in groups to explore computer concepts, operating systems, networks, telecommunications, and emerging technologies. Students can also become eligible to test for a core level of MOUS certification.

**Advanced Computer Information Systems** **828002**  
 Grades 10-12 Credit: 1  
 Prerequisite: Computer Information Systems

Advanced Computer Information Systems provides students with basic comprehension of the Microsoft Office software package and an opportunity to refine their skills through a variety of project and research activities.

Students apply problem-solving skills to real-life situations through advanced integrated software applications, including printed, electronic, and web publications. Students work individually and in groups to explore advanced computer maintenance activities, website development, programming, networking, emerging technology, and employability skills.

**Desktop/Multimedia Presentations** **839001**  
 Grades 10-12 Credit: 1  
 Prerequisite: Keyboarding or Keyboard proficiency

Students develop proficiency in creating desktop publications, multimedia presentations/projects, and websites 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/projects, calendars, and graphics.

**Advanced Desktop/Multimedia Presentations** **839002**  
 Grades 11-12 Credit: 1  
 Prerequisite: Desktop/Multimedia Presentations

This course provides a project base of instruction to enhance the desktop and multimedia skills of students.

Topics covered include designing, creating, and publishing websites; complying with laws and professional ethics; relating desktop/multimedia application to business and industry standards.

Students are eligible to take a core test level of the Microsoft Office Specialist examination.

**Accounting** **830000**  
 Grades 10-12 Credit: 1  
 Prerequisite: None

Students acquire the basic principles, concepts, and practices of the accounting cycle. Students learn fundamental accounting procedures using both manual and electronic systems.

Interpretation of accounting information is mastered through decision-making and problem-solving approaches that include source documents, case studies, and simulations. Course topics include forms of ownership, accounts receivable/accounts payable systems, payroll, taxes, banking activities, business ethics, and financial statements.

**Advanced Accounting** **831000**  
 Grades 11-12 Credit: 1  
 Prerequisite: Accounting

Students gain knowledge of advanced accounting principles, procedures, and techniques used to solve business problems and to make financial decisions. Students use accounting and spreadsheet software to analyze, synthesize, evaluate, and interpret business financial data. Students work in a technology-integrated environment using authentic workplace industry scenarios that reflect current industry trends and standards. Upon completion, students should be able to demonstrate an understanding of the principles of decision-making, problem-solving, and critical thinking, and apply them to both personal and business financial situations.

**Leadership Development** **820700**  
 Grades 9-12 Credit: 0.5

**Leadership Development** **820800**  
 Grades 9-12 Credit: 1  
 Prerequisite: None Credit of 0.5 or 1 varies by school

This course is designed to equip students with personal and group leadership skills. Course content includes units in principles of leadership, parliamentary law, speaking in public, developing effective communications and human relations skills, and developing positive public relations.

School and community leadership opportunities are used to provide practical application of the course content.

**Business Law** **835700**  
 Grades: 10-12 Credit: 0.5  
 Prerequisite: None

Students examine the foundations of the American legal system and learn the rights and responsibilities of citizens. Students gain practical knowledge and life skills by exploring economic and social concepts related to laws governing business and individuals. Focus areas include contracts, consumer protection, criminal law, tort law, international law, family/domestic law, employment law, and careers in the legal profession.

**Business Management** **836700**  
 Grades: 10-12 Credit: 0.5  
 Prerequisite: None

Students study basic management concepts and leadership styles as they explore business ownership, planning, operations, marketing, finance, economics, communications, the global marketplace, and human relations. Quality concepts, project management, problem solving, and ethical decision-making are an integral part of the course. Student leadership skills may be enhanced by participation in school-based job shadowing, internships, and/or the Future Business Leaders of America (FBLA).

## ENGLISH

Students must earn four credits in English, including a survey of British literature and a survey of American literature, for both the Standard and Advanced Studies diplomas. Students in LCPS must take an English course each year of high school.

**Near the end of English 11, students must take two Standards of Learning tests:**

**Reading**

**Writing**

Students in all English classes receive instruction to prepare them for the SOL tests.

**English high school courses** provide instruction in oral language, reading and literature, writing and grammar, research, and vocabulary. Students practice whole-class and independent reading, and teachers provide skills for reading fiction and nonfiction. Students compose both literary analysis essays and essays for other purposes, informational writing, and timed writing. They also master a range of grammar and usage skills. Research instruction emphasizes the ability to analyze, synthesize, and evaluate information from a variety of sources, and it requires students to produce formal research papers. Vocabulary instruction in all grades not only prepares students for PSAT, SAT, ACT, and SOL tests, it helps to develop students' reading comprehension and their ability to express themselves orally and in writing. Teachers focus on the use of context clues to understand unfamiliar words; distinctions between denotation and connotation; and a study of synonyms, antonyms, and homophones.

**Academic courses** challenge students to master rigorous standards while providing individualized support. **Honors courses** are offered in Grades 9, 10, and 11. While they focus on the same skills as grade level and academic courses, honors courses are distinguished by a more rigorous and inquiry-based study of literature and nonfiction texts. All students in an English honors course create a reflective portfolio that shows evidence of the growth in their analysis and written communication skills. All year-long honors courses receive a weight of 0.5. They move at an accelerated pace, cover a greater breadth and depth of textual study, and require more independent work.

Specific grade level distinctions are described below.

### English 9

**Academic**

**140300**

**Honors, weighted 0.5**

**140200**

Prerequisite: English 8

Credit: 1

In Grade 9 *oral language* instruction emphasizes dramatic reading of literary selections and planned oral presentations. The *reading and literature* component focuses on a study of fiction and nonfiction genres. *Writing instruction* develops skills in narrative, expository, and informational writing. Students produce documented *research* papers, using print, electronic databases, and on-line sources.

### English 10

**Academic**

**150300**

**Honors, weighted 0.5**

**150200**

Prerequisite: English 9

Credit: 1

In Grade 10 *oral language* instruction emphasizes the participation in and the critique of small group learning activities. The *reading and literature* component includes a survey of British literature, especially the reading of poetry and drama; nonfiction reading focuses on the understanding and evaluation of consumer information such as labels, warranties, and contracts. *Writing instruction* pinpoints expository composition and the ability to critique professional and peer writing. Students are taught to collect, organize, and present information in a documented *research* paper.

### English 11

**Academic**

**160300**

**Honors, weighted 0.5**

**160200**

Prerequisite: English 10

Credit: 1

**2 SOL Tests** In Grade 11 *oral language* instruction emphasizes the ability to give and to critique informative and persuasive presentations. The *reading and literature* component focuses on a survey of American literature and the ability to read and comprehend various kinds of manuals, business letters, newspapers, brochures, reports, catalogs, journals, speeches, biographies, and autobiographies. *Writing instruction* focuses on the ability to write persuasively, as well as personal, professional, and informational correspondence. In addition to research papers, students produce multi-media research reports.

### English 12

**Academic**

**170300**

Prerequisite: English 11

Credit: 1

This course is divided into two distinct semesters of study, one focusing on a study of world literature and the other on writing.

Students read representative literature from many cultures, countries, and time periods to increase their understanding of literature and the people who produced it. Activities in this semester include oral and written analyses of readings, overviews of the society and history that relate to a particular selection, and evaluations of authors' styles and themes.

In the other semester, students receive extensive writing practice in the expository, narrative, descriptive, and persuasive forms. The semester course begins with a review of elements of style and a study of paragraph development to prepare students for more extensive assignments that follow. Students practice composing skills through the writing of critical and creative essays, description, narrative, persuasion, and exposition

**ADVANCED PLACEMENT COURSES**

LCPS offers two AP courses for English, AP Language and Composition and AP Literature and Composition. Both AP courses provide instruction in oral language, reading and literature, writing and grammar, research, and vocabulary. In their oral language studies, students prepare and evaluate individual and group formal and informal presentations with an emphasis on persuasive presentations. The reading and literature strand includes the study of numerous literary works, including cultural archetypes and themes as well as critical perspectives; reading for pleasure, understanding, analysis, and evaluation; and application of rhetorical and literary terms.

Writing instruction in the AP courses encompasses timed responses to a variety of prompts and multi-paragraph essays with an emphasis on persuasive writing. Usage and mechanics instruction emphasizes independent editing. Students practice writing to prepare for college or careers. For the research component, students write at least one long, documented paper. Vocabulary instruction emphasizes preparation for standardized tests, including the SAT and ACT, and vocabulary development through reading and writing.

**English Language and Composition**

**Advanced Placement, weighted 1.0** **160100**  
 Grades 11-12 Credit: 1  
 Prerequisite: English 10

**SOL Test** AP Language and Composition is recommended for students who want a challenging course that emphasizes the analysis of nonfiction. Students read a variety of works from several genres, time periods, and cultures, including a focus on texts by American authors. Varied and frequent composition assignments require close reading, rhetorical analysis, exposition of ideas, and the understanding of particular rhetorical forms and terms.

Students have the opportunity to take the AP Language and Composition Exam in May with the possibility of earning college credit. (*SOL Test for 11th grade only.*)

**English Literature and Composition**

**Advanced Placement, weighted 1.0** **170100**  
 Grade 12 Credit: 1  
 Prerequisite: English 11

AP Literature and Composition is recommended for students who want a challenging course that emphasizes the study and practice of writing and the analysis of literature (prose, fiction, poetry, and drama). Students read a variety of works from several genres and cultures. Varied and frequent composition assignments require close reading, literary analysis, exposition of ideas, and the understanding of particular literary forms and terms.

Students have the opportunity to take the AP Literature and Composition Exam in May with the possibility of earning college credit.

**ENGLISH ELECTIVES**

**Creative Writing** **160700**  
 Grades 9-12 Credit: 0.5  
 Prerequisite: None

Creative Writing is a one-semester English elective that provides a supportive environment in which students write prose, poetry, and drama and read examples of various genres. This course focuses on the study of the fundamental elements of creative writing, including developing strategies for writing creatively, practicing aspects of narrative writing, using poetic devices, and developing voice. Students maintain a writing portfolio, collaborate to critique and improve their work for final review, and seek opportunities for publishing their writing.

**Fundamentals of Writing** **160702**  
 Grades 9-12 Credit: 0.5  
 Prerequisite: None

Fundamentals of Writing is a writing refresher course for writers of all ability levels who would like to develop their skills. This one-semester course provides a supportive environment in which students engage in various activities to improve their writing skills, particularly for expository and technical writing. This course focuses on the study of the fundamental elements of writing, including strategies for writing and aspects of nonfiction writing. Students maintain a writing portfolio and collaborate to critique and improve their work for final review.

**Etymology** **185700**  
 Grades 10-12 Credit: 0.5  
 Prerequisite: None

Etymology is the study of language families, root words, prefixes, suffixes, semantic changes, and word elements. Students study the meanings and derivations of English words to broaden their knowledge and command of the English language. This course is particularly useful for students preparing to take the SAT and ACT.

**21<sup>st</sup> Century Literacy Strategies I** **192000**  
 Grades 9-12 Credit: 1 per year

**21<sup>st</sup> Century Literacy Strategies I** **192700**  
 Grades 9-12 Credit: 0.5 per semester,  
 Students may take two semesters.  
 Prerequisite: None

This course is designed for students who will benefit from specific instruction in reading secondary content material and strengthening reading and writing skills and strategies. Instruction supports literacy development with instruction in skills related to the alphabetic principle, fluency, vocabulary, reading comprehension, writing, viewing, critical thinking, and preparation for SOL exams. Teaching strategies increase motivation by making reading relevant to students' lives.



**21<sup>st</sup> Century Literacy Strategies II** **193000**  
 Grades 10-12 Credit: 1 per year

**21<sup>st</sup> Century Literacy Strategies II** **193700**  
 Grades 10-12 Credit: 0.5 per semester,  
 Students may take two semesters.  
 Prerequisite: 21<sup>st</sup> Century Literacy Strategies I

This course is a continuation of 21<sup>st</sup> Century Literacy Strategies I. Instruction builds upon students' reading and writing competencies and support students' efforts to analyze, compare, evaluate, and interpret information from a variety of disciplines including texts, visual representations, and media.

**Theater Arts I** **250000**  
 Grades 9-12 Credit: 1  
 Prerequisite: None

Students survey the technical and performing art of theater. They are exposed to the major elements of theater and gain knowledge of its principles through study and practice in both performance and production. Representative units of study include improvisation, mime, basic acting, the history of the theater, stage settings, costuming, make-up, and lighting.

**Theater Arts II** **251000**  
 Grades 10-12 Credit: 1  
 Prerequisite: Drama I/Theater Arts I

More than a continuation of Drama I, Drama II is an in-depth study of areas covered only briefly in the first year and an introduction to new areas. The basic course is built on a cluster of required units that stress direction, design, and acting.

Required units are augmented or new units added to accommodate students' abilities and experiences.

**Theater Arts III** **252000**  
 Grades 11-12 Credit: 1  
 Prerequisite: Drama II/Theater Arts II

Designed for students with high interest and motivation for study in the theater arts while increasing their understanding of the entire realm of theater, the course provides the students with the opportunity to put theory into practice through major projects in directing, acting, and design.

**Theater Arts IV** **253000**  
 Grade 12 Credit: 1  
 Prerequisite: Drama III/Theater Arts III

Designed for students with intense interest in theater arts at professional and/or collegiate levels, Drama IV students often work with Drama III students. Drama IV students also complete independent projects specifically suited to individual strengths.

Although students have the opportunity to perform certain independent projects, they are expected to perform in group projects and activities in a leadership capacity.

**Technical Theater I** **254000**  
 Grades 9-12 Credit: 1  
 Prerequisite: None

The course is an exploration of the duties of stage technicians and their contribution to the total aesthetic effect of a dramatic production. Topics covered include design research and principles; scene shop organization; painting and construction techniques; equipment use and maintenance; principles and application of sound, lighting, and computer technology; the use of special effects; costume and make-up considerations and selection; publicity and business management; theater safety; and the function of technical stage personnel in production work. Technical theater incorporates academic study and hands-on application of knowledge and skills.

**Technical Theater II** **255000**  
 Grades 11-12 Credit: 1  
 Prerequisite: Technical Theater I  
 This course can be retaken for credit.

Similar to Technical Theater I, the course involves additional exploration of the duties of stage technicians and their contribution to the total aesthetic effect of a dramatic production. Topics covered include a review of basic design research and principles; leadership roles in scene shop supervision; a review of principles and application of sound, lighting, and computer technology with an emphasis on sound and lighting design principles; a survey of theater safety from the perspective of students' increased roles as supervisors in scene work activity; and major technical stage positions in production work. Technical Theater II incorporates additional research and academic study and hands-on application of knowledge and skills. Technical II students also complete an additional unit of Design/Technical Portfolio in preparation for college admission requirements. Students who retake Technical Theater II for credit specialize in an area of study and revise their design/technical portfolio to reflect their growing expertise in their specialization.

**Journalism** **187000**  
 Grades 9-12 Credit: 1  
 Prerequisite: None

This year-long elective introduces students to many facets of newspaper and mass media: production, history, and writing. Students learn to use a variety of journalism skills to write in journalistic style, recognize the role of mass communication in modern society, and understand the First Amendment.

Students selecting this course should have strong writing skills or should have an interest in developing their writing skills.

This course is designed to prepare students to serve on the newspaper staff (Newspaper Journalism I) or the yearbook staff (Photojournalism I).

**Newspaper Journalism I** **188000**  
 Grades 10-12 Credit: 1  
 Prerequisite: Journalism and/or Instructor's Approval

Students learn the basics of newspaper production while serving as staff writers for the school newspaper.  
 Units of study include school press law and ethics, layout and design, basic photography, basic publication technology, journalistic research, interviewing, plant preparation, and advertising.  
 Students are introduced to publication software.

**Newspaper Journalism II** **188002**  
 Grades 11-12 Credit: 1  
 Prerequisite: Newspaper Journalism I

Students serve as staff writers and page editors for the school newspaper.  
 Units of study expand upon those introduced in Newspaper Journalism I and add on-line publication, polls and statistics, and newspaper evaluation.  
 Students use publication software to produce the school newspaper.

**Newspaper Journalism III** **188003**  
 Grade: 12 Credit: 1  
 Prerequisite: Newspaper Journalism II

Students serve as editors for the school newspaper.  
 Units of study expand upon those introduced in Newspaper Journalism I and II and add software and on-line services, press law, photo management, and video interviewing.  
 Students use publication software to produce the school newspaper.

**Photojournalism I** **189001**  
 Grades 10-12 Credit: 1  
 Prerequisite: Journalism and/or Instructor's Approval

Students learn the basics of yearbook production while serving as staff members for the school yearbook.  
 Units of study include school press law and ethics, layout and design, basic photography, basic publication technology, journalistic research, interviewing, unifying concept, plant preparation, and advertising.  
 Students are introduced to publication software.

**Photojournalism II** **189002**  
 Grades 11-12 Credit: 1  
 Prerequisite: Photojournalism I

Students serve as staff members and page editors for the school yearbook.  
 Units of study expand upon those introduced in Photojournalism I and add inclusion, accuracy, and fairness; polls and statistics; and yearbook management.  
 Students use publication software to produce the school yearbook.

**Photojournalism III** **189003**  
 Grade: 12 Credit: 1  
 Prerequisite: Photojournalism II

Students serve as editors for the school yearbook.  
 Units of study expand upon those introduced in Photojournalism I and II and add press law, yearbook evaluation, video interviewing, and public relations.  
 Students use publication software to produce the school yearbook.

**Public Speaking** **194700**  
 Grades 10-12 Credit: 0.5  
 Prerequisite: None

Students explore the process of generating, transmitting, receiving, and evaluating ideas and feelings through intrapersonal and interpersonal communication, oral interpretation, group discussion, and public speaking. This course cultivates personal growth and development, develops oral communication skills, and promotes the application of oral communication skills to other academic disciplines and to life experiences.



## ENGLISH LANGUAGE LEARNERS

Special programs of instruction are available for students who are English Language Learners (ELL). ELL classes are offered in all high schools except where a school has too few students. In schools with very small enrollments, students are transported to nearby schools with larger student enrollments so that students can participate in the ELL program.

When students enroll in Loudoun County, they are asked if English is the language spoken at home. If it is not, an English language proficiency test is administered by a trained instructor. The test helps determine the classes appropriate for the student.

Each student's placement is determined on an individualized basis. Students are placed at the appropriate level in the classes below. Once academic English skills are acquired, the student may proceed to other classes listed in the *Program of Studies*.

ELL students must meet all graduation requirements in order to earn a diploma. In some cases, high school age students who possess little or no English skills may need more than four years to complete the credits and testing needed for graduation from high school. The Gateway Program is available to serve these students once they have reached their eighteenth birthdays or the semester in which they will turn eighteen.

### ENGLISH PROGRESSION

- |   |                       |
|---|-----------------------|
| 1. English as a World Language I (EWL I)<br>(World language credit; <b>not</b> an English credit)     | <b>394010</b>         |
| 2. English as a World Language II (EWL II)<br>(World language credit; <b>not</b> an English credit)   | <b>395010</b>         |
| 3. ELL Writing in Content Areas<br>(Elective credit; may be taken concurrently with EWL)              | <b>145010</b>         |
| 4. ELL Advanced Writing in the Content Areas<br>(Elective credit; may be taken concurrently with EWL) | <b>190015</b>         |
| 5. Advanced Language Learners<br>(English credit toward graduation requirement)                       | <b>197010</b>         |
| 6. English 9 (General)*   | <b>140400</b>         |
| 7. English 10 or English 12 (General)*  | <b>150400; 170400</b> |
| 8. English 11 (General)*  | <b>160400</b>         |

\* Academic and Honors English also available

### WORLD LANGUAGE CREDIT

EWL I (**394010**) and EWL II (**395010**) both count as world language credits. Native and heritage Spanish speakers may also enroll in the Spanish for Fluent Speakers (SFS) course series for world language credit. A placement test is required for SFS (**367000**).

### MATH PROGRESSION

- |  |               |
|--|---------------|
| 1. ELL Math (elective; <b>not</b> a math credit) | <b>588010</b> |
| 2. All other math courses                        |               |

### READING PROGRESSION

- |                    |               |
|--------------------|---------------|
| 1. ELL Reading I   | <b>190011</b> |
| 2. ELL Reading II  | <b>190012</b> |
| 3. ELL Reading III | <b>190013</b> |

### SCIENCE PROGRESSION

- |   |               |
|---|---------------|
| 1. ELL Science Concepts I (elective; <b>not</b> a science credit)     | <b>650310</b> |
| 2. ELL Science Concepts II<br>(Elective; <b>not</b> a science credit) | <b>650410</b> |
| 3. Earth Science  | <b>640300</b> |
| 4. All other science courses  |               |

### SOCIAL SCIENCE PROGRESSION

- |   |               |
|---|---------------|
| 1. ELL Social Science Concepts I<br>(Elective; <b>not</b> a social science credit)  | <b>770010</b> |
| 2. ELL Social Science Concepts II<br>(Elective; <b>not</b> a social science credit) | <b>770011</b> |
| 3. World History/Geography I or   | <b>740300</b> |
| 4. World History/Geography II   | <b>745300</b> |
| 5. U.S. and Virginia History  | <b>750300</b> |
| 6. U.S. Government  | <b>760300</b> |

### English as a World Language I (EWL I) **394010**

Grades 9-12 World Language Credit: 1

In this course beginner ELL students (codes 15-16) learn basic academic, cultural, and life skills, English vocabulary, grammar, and sentence structures. By the time they finish this class, students should be able to function at school and in the community.

### English as a World Language II (EWL II) **395010**

Grades 9-12 World Language Credit: 1

In this course intermediate ELL students (codes 16-17) continue to expand the communication skills they started in EWL I so that they can express more complex ideas and state their own opinions orally and in writing. By connecting with others, students demonstrate that they have progressed through basic needs language and are ready for some independent opportunities to study topics of interest to them.

### Advanced English Language Learners (ADV ELL) **197010**

Grades 9-12 English Credit: 1

In this course for intermediate to advanced ELL students (codes 17-19), the world becomes the classroom as students frequently use research and technology to tie their learning to their own experiences, to the local community, to American culture, and to a sense of being part of a global community. By the time they finish this class, students should have acquired maturing language skills that will help them succeed in many different academic and social situations that are experienced in high school and beyond.

Advanced ELL is the first course in the series for which students receive an English credit, and as such holds students to more rigorous standards than their prior ELL coursework.

### ELL Reading I **190011**

Grades 9-12 Elective Credit: 1

In this course beginning level ELL students (codes 15-16) often start with few written English skills. The students improve their basic English language reading skills through studying how letters' sounds, combinations, and meanings make words; by learning to listen for the way sounds are spoken and read from their letters; and by connecting beginning vocabulary for everyday needs. Students read short passages, folk tales, and

poems from cultures around the world and think about various ways to make what they read stay in their minds longer.

**ELL Reading II** **190012**  
 Grades 9-12 Elective Credit: 1

In this course intermediate ELL students (codes 16-17) progress to become more independent readers as they move beyond simple passages and skills. Reading to connect with others and what the student has already learned from life is an important part of this course. Vocabulary study moves students toward more mature language power. Readings from around the world and various forms of short novels—including graphic novels—may be chosen for class study by teachers.

**ELL Reading III** **190013**  
 Grades 9-12 Elective Credit: 1

In this course advanced ELL students (codes 17-19) show their growth and confidence by selecting more of their own readings, working with their teachers to monitor their own progress, and evaluating their use of their favorite reading strategies. Reading to connect with other cultures, communities, and individuals continues as an important part of this course so that the wonderful diversity of human beings' talents and contributions can be explored and celebrated.

**ELL Mathematics** **588010**  
 Grades 9-12 Elective Credit: 1  
(not a math credit)

In this course beginning and intermediate ELL students (codes 15-17) study both the language of mathematics and problem-solving skills to prepare them for courses available in the Math Department, such as Algebra I, Geometry, and Algebra II. If students need support for these courses, ELL Math helps prepare them. This course may be repeated if students are not ready for the Math sequence.

**ELL Science Concepts I** **650310**  
 Grades 9-12 Elective Credit: 1  
(not a science credit)

This course is designed for beginner to intermediate ELL students (codes 15-17) who need to learn high school science laboratory skills and vocabulary. Areas of science studied include general science theory, earth science, biology, and physical science. This course is required for beginning students before they take ELL Advanced Science Concepts.

**ELL Science Concepts II** **650410**  
 Grades 9-12 Elective Credit: 1  
(not a science credit)

Prerequisite: ELL Science Concepts I **or** ELL students (codes 17-19) whose transcripts show they have taken Earth Science, Biology, and Chemistry (in the students' first languages.)

This course is for intermediate to advanced ELL students (codes 17-19) who have completed the introductory ELL Science Concepts I course. Advanced Science Concepts focuses on the vocabulary required for success in Earth Science, Biology, and

other sciences students may choose to take later. Students read real scientific materials, do experiments, and write lab reports. The vocabulary and scientific content of the course is based on the Virginia Standards of Learning for Earth Science and Biology.

**ELL Social Science Concepts I** **770010**  
 Grades 9-12 Elective Credit: 1  
(not a social science credit)

This course is designed for beginning to intermediate ELL students (codes 15-17) who need to learn social science skills, such as map reading and researching, in the English language. The subject and vocabulary content of this course are based on the SOLs for World Geography, World History, and U.S. Government, and Economics. Concepts I World History topics cover the Origins of Man and Early Civilizations through The Renaissance and World Religions.

**ELL Social Science Concepts II** **770011**  
 Grades 9-12 Elective Credit: 1  
(not a social science credit)

This course is designed for intermediate to advanced ELL students (codes 17-19) who need to learn social science skills, such as reading graphs and tables and analyzing political cartoons in the English language. Concepts II also helps ELL students prepare for SOL tests they will take in their later Social Studies courses. The subject and vocabulary content of this course are based on the SOLs for World History and U.S. and Virginia History. Concepts II World History topics cover the Reformation through current events.

**ELL Writing in Content Areas** **145010**  
 Grades 9-12 Elective Credit: 1

This course is for intermediate to advanced ELL students (codes 16-17) who would like to learn ways to become better writers. Students practice writing skills that help them discover how to compose sentences and use words in different ways to lead their readers to understand their ideas easily. Writing assignments are designed to support students' growth as writers in core subject and elective study areas.

**ELL Advanced Writing in Content Areas** **190015**  
 Grades 9-12 Elective Credit: 1

This course is designed for intermediate to advanced ELL students (codes 17-19). The focus of the course is enhancing literacy in English with particular emphasis on refining strategies used by successful writers. The writing skills that students develop help them mature in understanding and correct use of English word structures, syntax, idioms, and content vocabulary for SOL classes. Writing confidently for a variety of purposes and audiences is the foundation of this course. Student writing assignments are designed to support SOL and content area writing standards in academic subjects.

## ELL GATEWAY

*Gateway is a two-year program based upon research regarding the way people learn multiple languages and on experience teaching young adult language learners. English Language Learning is seen as a long-term process in which students' growth in proficiency moves at different rates. Students' ability to pass standardized tests, such as the Pre-GED, is important, but the larger purpose of this program is successful integration into American society on a mature level: the ability to communicate with co-workers on the job; the ability to continue an education in college; and the ability to give and receive accurate information from a community service. The main goals are to give older ELL students (ages 18-20) the skills needed for life outside high school and the academic skills needed to enter an official GED class' five major topics: reading, writing, math, science, and social studies.*

### Gateway-ELL Developmental Reading

**(GW ELL Reading I)**

**GW-190111**

**(GW ELL Reading II)**

**GW-190112**

**(GW ELL Reading III)**

**GW-190113**

Grades 9-12; Ages 18-20

Elective Credit: 1

Gateway Reading offers instruction in essential reading strategies for comprehension and vocabulary development that will serve students throughout the rest of their lives. Students read from a variety of sources, occasionally select material themselves, and work with their teachers to develop goals that make learning meaningful for them. A variety of real-life applications are explored. Students are generally assigned by proficiency level.

### Gateway-ELL Writing in Content Areas

**GW-145110**

Grades 9-12; Ages 18-20

Elective Credit: 1

Gateway Writing shows students how to improve their writing through teacher-led examples and practice in many different types of practical assignments and on-the-job writing tasks. Students work on real-world assignments as they work toward improving their use of Standard American English.

### Gateway-ELL Advanced Writing in Content Areas **GW-190115**

Grades 9-12; Ages 18-20

Elective Credit: 1

This course is for intermediate to advanced ELL students who would like to learn ways to become better writers. Students practice writing skills that help them to improve their written communication skills and use of standard written English in order for others to understand their ideas easily. Writing assignments are designed to support students' growth in real-life applications.

### Gateway-Fast Math

Grades 9-12; Ages 18-20

**GW-588110**

Elective Credit: 1

Gateway Fast Mathematics helps students improve their use of everyday, practical math skills and the reading and writing skills used to solve math problems. Students' assignments give them the opportunity to act as consumers and as if they are at work.

### Gateway-ELL Social Science Concepts I

Grades 9-12; Ages 18-20

**GW-770110**

Elective Credit: 1

(not a social science credit)

Gateway Social Science I focuses on essential social science skills, such as map reading and research, as well as thinking and discussion methods to help students get the most out of what they read in their textbooks. Students explore a variety of topics in U.S. and World History that have real-world connections.

### Gateway-ELL Social Science Concepts II

Grades 9-12; Ages 18-20

**GW-770111**

Elective Credit: 1

(not a social science credit)

Gateway Social Science II is a continuation of first year Gateway Social Science and reinforces essential social science skills, such as reading graphs and tables and research. Reading and discussion continue to be an important part of making history come alive for students and become part of their lives.

### Gateway-ELL Science Concepts I

Grades 9-12; Ages 18-20

**GW-685110**

Elective Credit: 1

(not a science credit)

Gateway Science Concepts is a course in the basics of the scientific method, relating it to real-world connections, and to practical applications of science in everyday life. Students work on a variety of problems that can be solved by using science knowledge and skills and often choose the type of projects they would like to complete.

### Gateway-ELL Science Concepts II

Grades 9-12; Ages 18-20

**GW-685210**

Elective Credit: 1

(not a science credit)

Gateway Advanced Science Concepts is a continuation of the level 1 course and offers students more chances for learning based on their experiences and observations. Instruction in the scientific method continues, along with an emphasis on real-world connections and the practical applications of science in everyday life. Students engage in a variety of problem-solving tasks and often choose their projects.

## FAMILY & CONSUMER SCIENCES

**Choices**

Grades 9-10

Prerequisite: None

**841700**

Credit: 0.5

Teenagers are often faced with making tough decisions that can have lifetime effects. Through the application of critical thinking skills, reasoning skills, and problem solving abilities, students develop the skills to make decisions and accept and handle the responsibilities of those decisions.

Choices investigates timely issues such as group and family dynamics, establishing friendships, positive peer pressures, conflict resolution, dating relationships, human reproduction, stress and time management as well as dealing with the pressures of grades, working and going to school, drugs and alcohol, body perceptions and eating disorders, and negative peer pressure.

**Early Childhood Education I**

Grades 10-12

Prerequisite: None

Recommended: Human Development

*BWHS, FHS, BRHS, DHS, HHS, JCHS, PVHS, PFHS, SBHS, THS, and WHS only***844001**

Credit: 1

This program focuses on the integration of knowledge, skills, and practices required for careers in early childhood education. Content covers career paths within early childhood, education, and services; developmentally-appropriate practices; integration of the curriculum and instruction to meet children's developmental needs and interests; healthy and safe learning environments; principles of guiding children; teaching methods and strategies; and arranging learning centers that provide for exploration, discovery, and development.

Students gain practical experience in the early childhood facility at their high school, an elementary school, or a community childcare facility.

Tuberculosis testing is required for this class.

**Early Childhood Education II**

Grades 11-12

Prerequisite: Early Childhood Education I

*BWHS, FHS, BRHS, DHS, HHS, JCHS, PVHS, PFHS, SBHS, THS, and WHS only***845002**

Credit: 1

This course delves into program operations in early childhood and care. Students explore various jobs within the industry and gain work experience at various childcare facilities.

Upon completion of the program, students may obtain the Child Development Association National Credential through the Council for Professional Recognition, Child Development Association by taking a written exam at the age of 18 or above, meeting the hour requirements for work experience, and being observed at the work site.

Tuberculosis testing is required for this class.

**Fashion Design & Merchandising**

Grades 9-12

Prerequisite: None

**846700**

Credit: 0.5

Wardrobe planning, selection, color analysis, accessorizing, fashion design, and clothing maintenance are emphasized in the management of personal and family clothing.

Fashion trends are analyzed. Based on their abilities and interests, students construct various fashion projects for which students must provide materials.

**Gourmet Foods**

Grades 9-12

Prerequisite: None

**845700**

Credit: 0.5

The application of science concepts in biology, chemistry, and physics are important to the study of foods. Students learn the relationship of science to foods, use of technology, nutrition, wellness, sports nutrition, food safety, and sanitation, time and resource management, foods and cultural diversity, contemporary trends and issues, and the use of the food pyramid guide.

Hands-on activities in food preparation skills and techniques and in the actual planning, preparation, preservation, and serving of nutritious meals encourage the development of positive interdependence, individual accountability, social skills, and effective group functioning. Students use computers to analyze nutritional content of foods and to plan for special dietary needs.

**Human Development**

Grades 9-12

Prerequisite: None

**846000**

Credit: 0.5

In Human Development, students study and analyze principles and theories of human growth and development from conception to age six.

The interrelationships among physical, emotional, social, and intellectual development are explored, and conditions that influence human growth and development are examined.

**Independent Living**

Grades 9-12

Prerequisite: None

**840700**

Credit: 0.5

Whether students choose to enter the work force or to continue their education after high school, they must acquire the life skills necessary to make the transition to independent living.

Students become empowered to make responsible consumer choices by applying decision making, problem solving, and management processes; to see themselves in the roles of making and managing money; to calculate value for food, clothing, and housing dollars; and to apply the resources of time, materials, and technology for successful living.



**Introduction to Housing & Interior Design** **847700**  
 Grades 9-12 Credit: 0.5  
 Prerequisite: None

Students learn to evaluate and create plans for a pleasant living environment using their creativity, talent, and self-expression.

Housing selection; development of floor plans; design of various living areas; the selection and construction of home furnishings, equipment, and accessories; and interior decorating fundamentals are covered.

Students learn to use the computer to design the exterior and interior of a house as well as landscape design. Individual design projects may be required for which the students must provide materials.

**Leadership Development** **820700**  
 Grades 9-12 Credit: 0.5  
**Leadership Development** **820800**  
 Grades 9-12 Credit: 1  
 Prerequisite: None Credit of 0.5 or 1 varies by school

This course is designed to equip students with personal and group leadership skills. Course content includes units in principles of leadership; parliamentary law; speaking in public; developing effective communications and human relations skills; and developing positive public relations.

School and community leadership opportunities are used to provide practical application of the course content.

**Marriage & Family Dynamics** **842700**  
 Grades 11-12 Credit: 0.5  
 Prerequisite: None

Creating and sustaining a lasting marriage begins with the study of self and relationships with others. The institution of marriage is examined and includes topics such as mate selection, commitment, communication, role expectations, financial stability, careers, and parenthood. The curriculum also addresses family dynamics, balancing work and family life, building strong family units, and solving personal and family problems.



**Teacher Cadet Program, weighted 0.5** **844002**  
 Grade 12 Credit: 1  
 Prerequisite: 3.0 GPA, three teacher recommendations, a student essay, and an application process

The Teacher Cadet Program is designed to attract talented high school students into the teaching profession through a challenging introduction to teaching.

The program seeks to provide these students insight into the nature of teaching, the problems of schooling, and the critical issues affecting the quality of education in America's schools.

Students participate in field experiences in LCPS Grades K-12. Students work with classroom teachers at their chosen grade level of interest.

Tuberculosis testing is required for Cadet students.

## HEALTH AND PHYSICAL EDUCATION

**Health and Physical Education 9 (PE)** **440000**  
 Grade 9 Credit: 1  
 Prerequisite: None

Students are offered a variety of challenging activities with an emphasis on incorporating the five components of fitness into a fitness plan. High School Health and Physical Education is scheduled for one block every other day. Students begin to develop personal choices for preferred activities that include cooperative games, individual and dual sports, team sports, rhythmic activities, physical fitness testing, and lifetime fitness and recreational activities.

The 9<sup>th</sup> grade health curriculum includes topics such as personal fitness and nutrition; stress and mental health; risk behaviors; consumer health and health agencies; global health issues; Cardio-Pulmonary Resuscitation (CPR), Automatic External Defibrillation (AED) and First Aid; community health; and the use of technology in making informed, healthy choices. Selected Family Life Education (FLE) topics are also included in this course.

**Health and Physical Education 10** **450000**  
 Grade 10 Credit: 1  
 Prerequisite: Health and PE 9

Students are offered a variety of challenging activities with an emphasis on incorporating the five components of fitness into a fitness plan. High School Health and Physical Education is scheduled for one block every other day. At this level students select preferred activities from a menu of activities, including cooperative games, individual and dual sports, team sports, rhythmic activities, and lifetime fitness and recreational activities. Physical fitness testing is also included in this course.

The 10<sup>th</sup> grade health curriculum includes topics such as alcohol, tobacco, and other drugs; organ donation; nutrition and wellness planning; risk behaviors; emotional health; peer pressure; and conflict resolution. Driver Education classroom instruction and selected Family Life Education (FLE) topics are also included in this course.

**Classroom Driver Education** **453000**  
 Grade 10 Credit: 0  
 Prerequisite: Health and PE 9

This course consists of 36 hours of classroom instruction and is required prior to taking behind-the-wheel training. Classroom Driver Education includes topics such as motor vehicle laws, vehicle controls, influences on driver behavior, adverse conditions, responsible driving behaviors, time and space management, and basic maneuvers. This course follows the Virginia Standards of Learning for Driver Education classroom instruction, Modules 1-10.

As mandated by the Virginia General Assembly, a 90-minute Partners for Safe Teen Driving presentation is also required for classroom completion. The parent/guardian **and** teen driver must attend this presentation together (§22.1-205 of the *Code of Virginia*). Students will not be offered a Driver Education classroom completion card (DEC-1) until this requirement is met.



**Advanced Physical Education I** **460000**  
 Grades 11-12 Credit: 1

**Advanced Physical Education I** **460700**  
 Grades 11-12 Credit: 0.5  
 Prerequisite: Health and PE 10

This elective course is designed for students who have an interest in maintaining overall fitness for life. Advanced PE promotes an appreciation of the benefits of lifetime physical fitness, with an emphasis placed on self-selection of activities that the student will be likely to continue for a lifetime. Students have the opportunity to develop an advanced level of proficiency in the following areas: individual and dual sports, team sports, weight training and conditioning, personal fitness, recreational activities, and rhythmic activities. Students also develop a fitness portfolio that includes personal fitness goals, nutrition, and healthy choices.

This course may be offered in alternating years.

**Advanced Physical Education II** **465000**  
 Grades 11-12 Credit: 1

**Advanced Physical Education II** **465700**  
 Grades 11-12 Credit: 0.5  
 Prerequisite: Health and PE 10

This elective course focuses on the design and implementation of a personal fitness portfolio that includes dietary needs; personal fitness goals; physical activities that are self-selected and sustainable for a lifetime; ongoing fitness and nutrition assessments; understanding of target heart rate; use of fitness data; and daily activity logs that are designed to record physical activity in the moderate to vigorous range.

Students may select physical activities from the following areas: individual and dual sports, team sports, weight training and conditioning, personal fitness, recreational activities, and rhythmic activities.

This course may be offered in alternating years.

## WORLD LANGUAGES AND CULTURES

***All public Virginia colleges and universities accept American Sign Language as fulfillment of the world language entrance requirement; however, some Virginia private colleges and out-of-state institutions of higher education do not accept American Sign Language courses for world language credit.***

**American Sign Language I (ASL)** **380000**  
 Grades 9-12 Credit: 1  
 Prerequisite: None

Students learn basic ASL vocabulary and acquire knowledge of the manual alphabet. They also study the history of American Sign Language and the Deaf culture. Expressive and receptive language skills are practiced within the context of meaningful and experiential activities related to home, school, and community environments.

**American Sign Language II** **382000**  
 Grades 10-12 Credit: 1

Prerequisite: American Sign Language I

Building on the rudiments learned in ASL I, students expand their vocabulary and increase their proficiency in expressive and receptive conversational skills using more complex grammatical structures.

Students continue their study of Deaf heritage and culture and are encouraged to interact with Deaf people.

**American Sign Language III** **383000**  
 Grades 11-12 Credit: 1

Prerequisite: American Sign Language II

Through spiraling of concepts, structures, and functions acquired in ASL II, students improve their skills in functional contexts.

Students analyze authentic ASL literature such as storytelling, folklore, poetry, and drama. The study of the evolution of ASL and the maintenance of interpersonal relations with the Deaf community are an integral part of ASL III.

**French I** **340000**  
 Grades 7-12 Credit: 1

Prerequisite: None

Students develop the ability to communicate about themselves and their immediate environment in French at the beginner-novice level by producing basic language structures. This communication is evidenced in all four language skills: listening, speaking, reading, and writing. Listening and reading facilitate the ability to communicate orally and in writing.

**French II** **342000**  
 Grades 8-12 Credit: 1

Prerequisite: French I

Students continue to develop proficiency in French at the intermediate-novice level in all four language skills: listening, speaking, reading, and writing. Listening and reading facilitate the ability to communicate orally and in writing.

Students learn to function in real-life situations using more complex sentences and language structures. They also read material on familiar topics and produce short writing samples.

**French III** **343000**  
 Grades 9-12 Credit: 1

Prerequisite: French II

Students continue to develop and refine their proficiency in French at an advanced-novice level integrating all four language skills: listening, speaking, reading, and writing. Emphasis is placed on the ability to interact orally and in writing.

Students communicate using more complex language structures on a variety of topics, moving from concrete to more abstract concepts. At this level, students comprehend authentic materials to which they listen and read and are able to identify significant details when the topics are familiar.

**French IV—Honors, weighted 0.5** **344000**  
 Grades 10-12 Credit: 1  
 Prerequisite: French III

Students develop more sophisticated communication skills in French at an intermediate-low level integrating all four language skills: listening, speaking, reading, and writing. Emphasis is placed on the abilities to interact orally and in writing. Authentic language sources are emphasized at this level.

Students communicate using more complex language structures and express abstract ideas with reasonable fluency. Students are able to create and listen with understanding to reports and presentations. They are also able to describe, summarize and discuss selected AP global themes and topics.

**French V—Honors, weighted 0.5** **345000**  
 Grades 10-12 Credit: 1  
 Prerequisite: French IV—Honors

Students in French V study AP global themes and topics using more sophisticated communication at an intermediate-mid level in all four language skills: listening, speaking, reading, and writing. Emphasis is placed on the abilities to interact, persuade, compare, and contrast orally and in writing.

Students study literary works as well as current and historical events representing the various geographical regions of the world where French is spoken.

**French**  
**Advanced Placement, weighted 1.0** **345100**  
 Grades 10-12 Credit: 1  
 Prerequisite: French V—Honors

AP French is holistically designed to offer students a proficiency-based, rigorous college-level experience. This culminating course in French increases student potential in interpretive, interpersonal, and presentational modes in the six global course themes: Global Challenges; Personal and Public Identities; Contemporary Life; Science and Technology; Beauty and Aesthetics; and Families and Communities.

Students build greater fluency in their language skills by developing comprehension and comprehensibility, a rich vocabulary, language control, communication strategies, and cultural awareness. Students are expected to communicate entirely in French as they compare and contrast French cultures with their personal communities and connect their studies with other disciplines in their high school curricula.

Students have the opportunity to take the AP French Exam in May with the possibility of earning college credit.

**German I** **370000**  
 Grades 7-12 Credit: 1  
 Prerequisite: None

Students develop the ability to communicate about themselves and their immediate environment in German at the beginner-novice level by producing basic language structures. This communication is evidenced in all four language skills: listening, speaking, reading, and writing. Listening and reading facilitate the ability to communicate orally and in writing.

**German II** **372000**  
 Grades 8-12 Credit: 1  
 Prerequisite: German I

Students continue to develop proficiency in German at the intermediate-novice level in all four language skills: listening, speaking, reading, and writing. Listening and reading facilitate the ability to communicate orally and in writing.

Students learn to function in real-life situations using more complex sentences and language structures. They also read material on familiar topics and produce short writing samples.

**German III** **373000**  
 Grades 9-12 Credit: 1  
 Prerequisite: German II

Students continue to develop and refine their proficiency in German at an advanced-novice level, integrating all four language skills: listening, speaking, reading, and writing. Emphasis is placed on the ability to interact orally and in writing.

Students communicate using more complex language structures on a variety of topics, moving from concrete to more abstract concepts. At this level students comprehend authentic materials to which they listen and read and are able to identify significant details when the topics are familiar.

**German IV—Honors, weighted 0.5** **374000**  
 Grades 10-12 Credit: 1  
 Prerequisite: German III

Students develop more sophisticated communication skills in German at an intermediate-low level, integrating all four language skills: listening, speaking, reading, and writing. Emphasis is placed on the abilities to interact orally and in writing. Authentic language sources are used at this level.

Students communicate using more complex language structures and express abstract ideas with reasonable fluency. Students are able to create and listen with understanding to reports and presentations in German. They are also able to describe, summarize, and discuss selected AP global themes and topics.

**German V—Honors, weighted 0.5** **375000**  
 Grades 10-12 Credit: 1  
 Prerequisite: German IV—Honors

Students study selected AP global themes and topics using more sophisticated communication in German at an intermediate-mid level in all four language skills: listening, speaking, reading, and writing. Emphasis is placed on the abilities to interact, persuade, compare, and contrast both orally and in writing.

Students study literary works as well as current and historical events representing the various geographical regions of the world where German is spoken.

**German**  
**Advanced Placement, weighted 1.0** **375100**  
 Grades 10-12 Credit: 1  
 Prerequisite: German V—Honors

AP German is holistically designed to offer students a proficiency-based, rigorous college-level experience. This culminating course in German increases student potential in

interpretive, interpersonal, and presentational modes in the six global course themes: Global Challenges; Personal and Public Identities; Contemporary Life; Science and Technology; Beauty and Aesthetics; and Families and Communities.

Students build greater fluency in their language skills by developing comprehension and comprehensibility, a rich vocabulary, language control, communication strategies, and cultural awareness. Students are expected to communicate entirely in German as they compare and contrast target language cultures with their personal communities and connect their studies with other disciplines in their high school curricula.

Students have the opportunity to take the AP German Exam in May with the possibility of earning college credit.

**Latin I** **350000**  
 Grades 7-12 Credit: 1  
 Prerequisite: none

This course explores basic Latin grammar and vocabulary and develops the skills necessary to read elementary Latin texts. The linguistic nature of the course is supplemented by a general overview of Greco-Roman civilization, including history, daily life, and mythology. English derivatives are emphasized to show the influence of Latin upon the English language and to contribute to the growth of each student's personal vocabulary.

**Latin II** **352000**  
 Grades 8-12 Credit: 1  
 Prerequisite: Latin I

Students review material from Latin I, learn intermediate grammar and vocabulary, and continue to develop skills necessary to read Latin texts. They expand their understanding of Greco-Roman civilization and English derivatives.

**Latin III** **353000**  
 Grades 9-12 Credit: 1  
 Prerequisite: Latin II

Students learn advanced grammatical concepts and vocabulary. They read stories of increasing length and complexity that pertain to the expansion of the Roman Empire. The study of Greco-Roman culture and English derivatives continues.

**Latin IV—Honors, weighted 0.5** **354000**  
 Grades 10-12 Credit: 1  
 Prerequisite: Latin III

This course introduces students to the reading and interpretation of authentic Latin literature. Students learn the basics of Latin poetry including scansion and literary devices. Emphasis is placed upon Roman culture, Roman history, English derivatives, and Latin grammar relevant to the literary text.

**Latin V—Honors, weighted 0.5** **355000**  
 Grades 10-12 Credit: 1  
 Prerequisite: Latin IV—Honors

Latin V pairs a review of Latin grammar and vocabulary with the reading of authentic passages from various Roman authors in preparation for the AP Latin course. It provides students with the skills necessary to translate the authentic text, read aloud Latin

verse in meter, analyze stylistic technique, and interpret the author's intent through word choice, syntax, and mythological and historical allusions. An exploration of the pertinent history and mythology is also incorporated into this class. Students continue to broaden vocabulary through the study of English derivatives.

**Latin**  
**Advanced Placement, weighted 1.0** **359100**  
 Grades 10-12 Credit: 1  
 Prerequisite: Latin V—Honors

This course follows the AP Latin syllabus for Vergil's *Aeneid* and Caesar's *Gallic War*. Students read and translate as literally as possible all required passages and read selected portions of the *Aeneid* and *Gallic War* in English. The course examines the historical, social, cultural, and political context of the works and provides frequent practice in reading Latin at sight.

Students are also given frequent opportunities to practice written analysis and critical interpretation, including appropriate references to the use of stylistic and metrical techniques by Vergil and Caesar.

Students have the opportunity to take the AP Latin Exam in May with the possibility of earning college credit.

**Mandarin Chinese I** **321000**  
 Grades 9-12 Credit: 1  
 Prerequisite: None

Students are introduced to the Chinese language and culture in this course. The basic objectives are to help each student attain an acceptable degree of proficiency in the four skills of listening, speaking, reading, and writing, and to present the language within the context of the contemporary Chinese culture. Chinese characters are introduced systematically as they are related to the listening/speaking activities conducted.

**Mandarin Chinese II** **331000**  
 Grades 10-12 Credit: 1  
 Prerequisite: Mandarin Chinese I

Students continue to build proficiency in the Chinese language and expand their understanding of culture in this course. The basic objectives are to help each student continue to develop an acceptable degree of proficiency in the four skills of listening, speaking, reading, and writing, and to thematically present the language within the context of the contemporary Chinese culture. Chinese characters are reviewed and expanded systematically as they are related to the listening/speaking activities conducted.

**Mandarin Chinese III** **334000**  
 Grades 11-12 Credit: 1  
 Prerequisite: Mandarin Chinese II

Students increase proficiency in the basics of Chinese in this course. The objectives of this course are to review and amplify structures previously taught and introduce more advanced vocabulary and structures through the four skills of listening, speaking, reading, and writing and to present the language within the context of the contemporary Chinese culture. Chinese characters are reviewed and more characters introduced systematically as they relate to the listening/speaking activities conducted throughout the course.

**Spanish for Fluent Speakers I** **367000**  
 Grades 7-12 Credit: 1  
 Prerequisite: Placement Test

Spanish for Fluent Speakers I is designed to meet the needs of students whose primary language is Spanish and who have minimal or no formal instruction in the language. While developing their current competencies in formal speaking and listening, students focus on the acquisition of comparable competencies in reading and writing.

Upon successful completion of the course, students may continue in the Spanish for Fluent Speakers sequence.

**Spanish for Fluent Speakers II** **367300**  
 Grades 7-12 Credit: 1  
 Prerequisite: Spanish for Fluent Speakers I/Placement Test

Spanish for Fluent Speakers II is designed to increase proficiency in reading and writing of students whose primary language is Spanish.

Major grammar points are reviewed and finer points of grammar are studied, placing emphasis on style and structural accuracy. Comprehension and communication skills are refined through the reading and discussion of selections written by classic and modern authors in a variety of genres.

Upon successful completion of the course, students may continue in the Spanish for Fluent Speakers sequence.

**Spanish for Fluent Speakers III—Honors, weighted 0.5** **367500**  
 Grades 9-12 Credit: 1  
 Prerequisite: Spanish for Fluent Speakers II/Placement Test

Spanish for Fluent Speakers III is designed to further refine fluent speakers' literacy and proficiency skills. Students read from a variety of genres representing numerous Spanish-speaking countries. Students discuss current themes and events including world views, global challenges, and students as citizens of a global society.

This course prepares students to enroll in AP Spanish.

Upon successful completion of the course, the student may continue in the traditional Spanish sequence in Spanish V-Honors or AP Spanish.

**Spanish I** **360000**  
 Grades 7-12 Credit: 1  
 Prerequisite: None

Students develop the ability to communicate about themselves and their immediate environment in Spanish at the beginner-novice level by producing basic language structures. This communication is evidenced in all four language skills: listening, speaking, reading, and writing. Listening and reading facilitate the ability to communicate orally and in writing.

**Spanish II** **362000**  
 Grades 8-12 Credit: 1  
 Prerequisite: Spanish I

Students continue to develop proficiency in Spanish at the intermediate-novice level in all four language skills: listening, speaking, reading, and writing. Listening and reading facilitate the ability to communicate orally and in writing.

Students learn to function in real-life situations using more complex sentences and language structures. They also read material on familiar topics and produce short writing samples.

**Spanish III** **363000**  
 Grades 9-12 Credit: 1  
 Prerequisite: Spanish II

Students continue to develop and refine their proficiency in Spanish at an advanced-novice level integrating all four language skills: listening, speaking, reading, and writing. Emphasis is placed on the ability to interact orally and in writing.

Students communicate using more complex language structures on a variety of topics, moving from concrete to more abstract concepts. At this level, students comprehend authentic materials to which they listen and read and are able to identify significant details when the topics are familiar.

**Spanish IV—Honors, weighted 0.5** **364000**  
 Grades 10-12 Credit: 1  
 Prerequisite: Spanish III

Students develop more sophisticated communication skills in Spanish at an intermediate-low level integrating all four language skills: listening, speaking, reading, and writing. Emphasis is placed on the abilities to interact orally and in writing. Authentic language sources are emphasized at this level.

Students communicate using more complex language structures and express abstract ideas with reasonable fluency. Students are able to create and listen with understanding to reports and presentations. They are also able to describe, summarize and discuss selected AP global themes and topics.

**Spanish V—Honors, weighted 0.5** **365000**  
 Grades 10-12 Credit: 1  
 Prerequisite: Spanish IV—Honors, or  
 Spanish for Fluent Speakers III—Honors

Students in Spanish V study selected AP global themes and topics using more sophisticated communication at an intermediate-mid level in all four language skills: listening, speaking, reading, and writing. Emphasis is placed on the abilities to interact, persuade, compare, and contrast orally and in writing.

Students also study literary works as well as current and historical events representing the various geographical regions of the world where Spanish is spoken.

**Spanish**  
**Advanced Placement, weighted 1.0** **365100**  
 Grades 10-12 Credit: 1  
 Prerequisite: Spanish V—Honors or  
 Spanish for Fluent Speakers III—Honors

AP Spanish is holistically designed to offer students a proficiency-based, rigorous college-level experience. This culminating course in Spanish increases student potential in interpretive, interpersonal, and presentational modes in the six global course themes: Global Challenges; Personal and Public Identities; Contemporary Life; Science and Technology; Beauty and Aesthetics; and Families and Communities.

Students build greater fluency in their language skills by developing comprehension and comprehensibility, a rich



vocabulary, language control, communication strategies, and cultural awareness. Students are expected to communicate entirely in Spanish as they compare and contrast target language cultures with their personal communities and connect their studies with other disciplines in their high school curricula.

Students have the opportunity to take the AP Spanish Exam in May with the possibility of earning college credit.

## MARKETING

*All Marketing Education students may join DECA, an association of Marketing students that promotes leadership development, civic consciousness, social intelligence, and vocational understanding.*

*DECA is organized on local, state, and national levels to provide incentives and recognition through activities, competitions, and even scholarship opportunities.*

*DECA is co-curricular and is an integral part of each Marketing Education course.*

**Introduction to Business & Marketing** **821000**  
 Grades 9-11 Credit: 1  
 Prerequisite: None

This entry-level course is offered for all students and recommended as an introduction to the career preparation program in Business & Marketing Education.

Students explore the role of business and marketing in the free enterprise system and the global economy and apply decision-making skills as consumers, employees, and citizens.

Communication and interpersonal skills are developed through various activities.

**Marketing Co-Op** **822000**  
 Grades 11-12 Credits: 2

**Marketing Non-Co-Op** **822100**  
 Grades 11-12 Credit: 1

Prerequisite: Screening Conference with Instructor, Introduction to Business & Marketing (recommended)

Providing instruction that enables students to hold and succeed in an entry-level job in marketing, the course combines classroom instruction with supervised on-the-job training in a local marketing business.

In this year of the program, students concentrate on developing competencies needed by marketing workers in the areas of human relations, communications, advertising, display, operations, sales, and product and service technology.

The student is provided with a variety of learning methods including practical activities, simulations, computer activities, guest speakers, and role-playing.

Co-op students are expected to stay employed throughout the school year in a teacher-approved, marketing-related job. DECA is an integral part of this course.

**Advanced Marketing Co-Op** **823000**  
 Grade 12 Credits: 2

**Advanced Marketing Non-Co-Op** **823100**  
 Grade 12 Credit: 1

Prerequisite: Marketing Co-Op or Marketing Non-Co-Op

Offering training in pre-management level skills and designed for the student who has a firm career interest in marketing, this course allows students to continue the arrangement of combining classroom instruction with supervised on-the-job training in a local marketing business.

Instruction in this year of the program concentrates primarily on the development of competencies in the areas of sales promotion, merchandising, marketing research, and management. Entrepreneurship is an integral part of this class.

The student is provided with a variety of learning methods including practical activities, simulations, computer activities, guest speakers, and role-playing.

Co-op students are expected to stay employed throughout the school year in a teacher-approved marketing-related job. DECA is an integral part of this course.

**Sports, Entertainment, & Recreation Marketing** **821100**  
 Grades 10-12 Credit: 1

Prerequisite: Introduction to Business & Marketing Recommended

Sports, Entertainment, & Recreation Marketing is a course designed for students with an interest in the sports, entertainment, and recreation industry.

This unique and innovative program explores the following areas: an orientation and understanding of the sports, entertainment, and recreation industry; strategic planning; product licensing; dealing with agents and personal managers; examination of concessions and on-site merchandising; market analysis; investigating safety and security procedures; event marketing and execution; and the production of a culminating event and the analysis of the event. DECA is an integral part of this course.

**Leadership Development** **820700**  
 Grades 9-12 Credit: 0.5

**Leadership Development** **820800**  
 Grades 9-12 Credit: 1

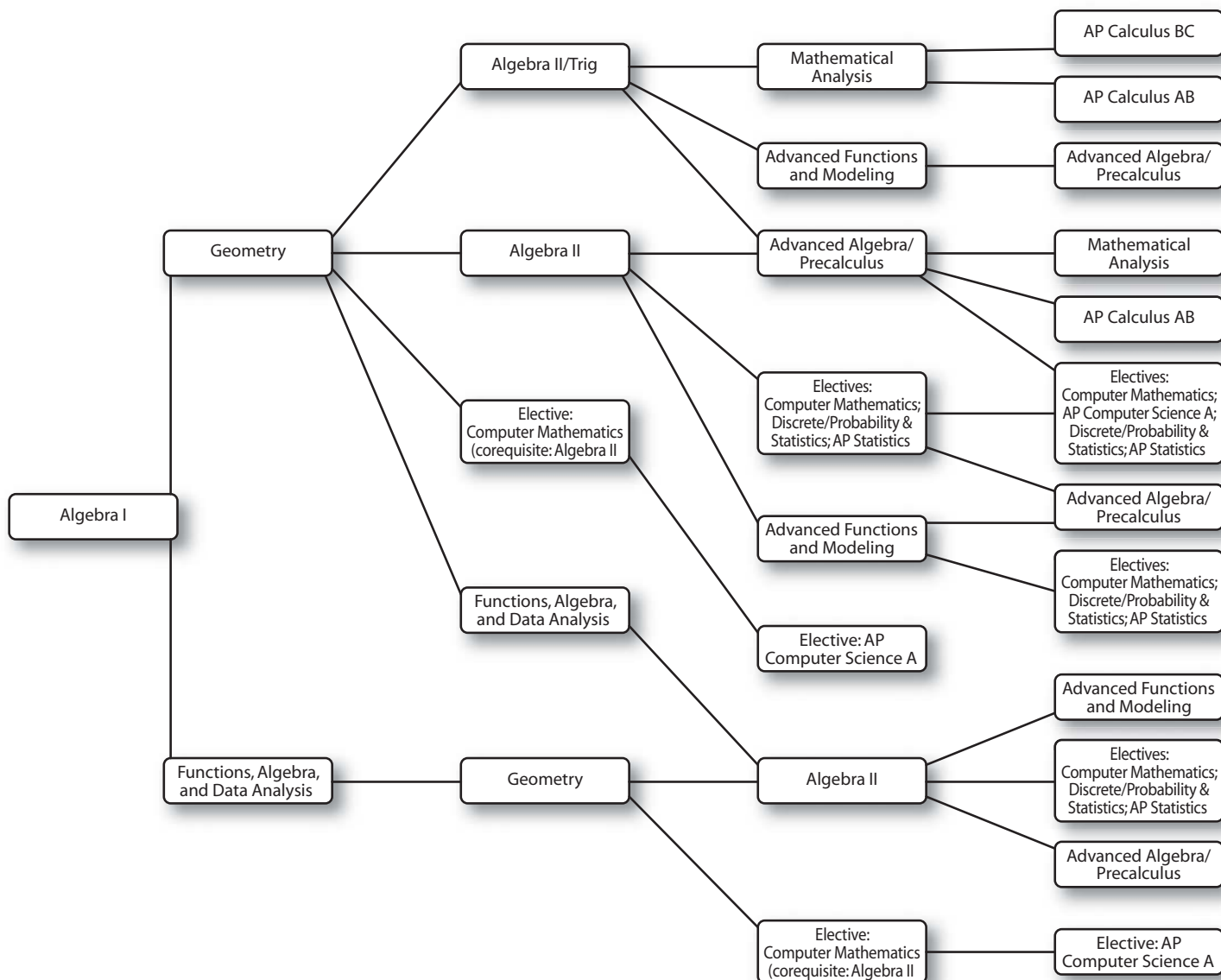
Prerequisite: None Credit of 0.5 or 1 varies by school

This course is designed to equip students with personal and group leadership skills. Course content includes units in principles of leadership, parliamentary law, speaking in public, developing effective communications and human relations skills, and developing positive public relations.

School and community leadership opportunities are used to provide practical application of the course content.



MATHEMATICS PROGRESSION CHART



MATHEMATICS

**Algebra I, Part 1\*** **542000**  
 Grades: 9-12 Credit: 1\*  
 Prerequisite: Mathematics 8

Algebra I, Part 1 supports and promotes student success in mathematics coursework necessary to fulfill graduation requirements. While strengthening prerequisite skills in the areas of operations with whole numbers, fractions, decimals, percentages, integers, and rational numbers, algebraic concepts are solidified through modeling and the use of manipulatives, graphing calculators, and computer software where appropriate. A concentration on improving problem solving and communication in mathematics builds student confidence. Students may earn one mathematics credit for the Modified Standard Diploma by successfully completing Algebra I, Part 1.

**Algebra I, Part 2\*** **543000**  
 Grades: 9-12 Credit: 1\* (If completed in conjunction with Algebra I, Part 1)

Prerequisite: Algebra I, Part 1

**SOI-TEST** Algebra I, Part 2 supports and promotes student success in mathematics coursework necessary to fulfill graduation requirements. The study of linear and quadratic equations, linear inequalities, systems of equations, and functions inherent in Algebra are emphasized in the course.

Graphing calculators and other emerging technologies are used to facilitate problem solving, data analysis, and transformational graphing. Students should consult with a school counselor about the credits that may be used to fulfill the mathematics requirements for a high school diploma.

**\*For students entering the 9<sup>th</sup> grade for the first time in 2009-2010 or after, these courses may only be used as mathematics credits to fulfill the requirements of a Modified Standard Diploma.**

**Algebra I**

Grades: 9-12

**540000**

Credit: 1

Prerequisite: Successful Completion of Grade 7 or  
Grade 8 Mathematics

**SOI TEST** Algebra I incorporates all of the concepts and skills necessary for students to pursue the study of rigorous advanced mathematics. The arithmetic properties of numbers are extended to include the development of the real number system. The fundamental concepts of equality, functions, multiple representations, probability, and data analysis guide the activities that allow students to enhance critical thinking skills.

Computers are used as tools to enhance the problem-solving process and provide students with visual models that augment the learning of algebraic concepts. Graphing calculators are utilized to enhance the understanding of functions and provide a powerful tool for solving and verifying solutions to equations and inequalities. Emerging technologies are incorporated into the curriculum as they become available.

**Geometry**

Grades: 9-12

**550000**

Credit: 1

Prerequisite: Algebra I

**SOI TEST** Geometry is the unified study of plane, solid, and coordinate geometric concepts that provide students with the skills requisite for the study of advanced mathematics. Investigations of lines, planes, congruence, similarity, areas, volumes, circles, and three-dimensional shapes are incorporated to provide a complete course of study. Formal and informal deductive reasoning skills are developed and applied to the construction of formal proofs. The course includes opportunities for inquiry-based learning through hands-on activities and experiences that allow for utilizing computer software to explore major concepts and develop critical thinking skills. An emphasis on reasoning, critical thinking, and proof permeates the course and includes two-column proofs, paragraph proofs, and coordinate proofs.

Graphing calculators are used to enhance the understanding of functions and provide a powerful tool for solving and verifying solutions to equations and inequalities. Emerging technologies are incorporated into the curriculum as they become available. Mathematical communication and reasoning are emphasized throughout the course.

**Functions, Algebra, and Data Analysis**

Grades: 9-12

**565000**

Credit: 1

Prerequisite: Algebra I

Designing experiments and building mathematical models to describe the experimental results allow students to strengthen conceptual understandings of linear, quadratic, exponential, and logarithmic functions. Within the context of mathematical modeling and data analysis, students study functions and their behaviors, systems of inequalities, probability, experimental design and implementation, and analysis of data.

Data is generated by practical applications arising from science, business, and finance. Students solve problems that require the formulation of linear, quadratic, exponential, or logarithmic equations or a system of equations. Through the investigation of mathematical models and interpretation/analysis

of data from real life situations, students strengthen conceptual understandings in mathematics and further develop connections between algebra and statistics.

Graphing calculators and other emerging technologies are incorporated into instruction to enhance teaching and learning. Mathematical communication, reasoning, problem solving, critical thinking, and multiple representations are emphasized throughout the course.

**Algebra II**

Grades: 9-12

**560000**

Credit: 1

Prerequisite: Algebra I and Geometry

**SOI TEST** Algebra II provides a thorough treatment of advanced algebraic concepts through the study of functions, including parent functions, families of functions, and transformational graphing. Transformational graphing uses translations, reflections, dilations, and rotations, to generate a family of graphs from a parent graph. The continued study of equations, systems of equations, inequalities, and systems of inequalities builds on Algebra I concepts while polynomials, imaginary numbers in the complex number system, and sequences and series allow additional opportunities for modeling and practical applications.

Graphing calculators and other emerging technologies are incorporated into instruction to enhance teaching and learning. Mathematical communication, reasoning, problem solving, critical thinking, and multiple representations are emphasized throughout the course.

**Algebra II/Trigonometry, weighted 0.5**

Grades: 9-12

**571000**

Credit: 1

Prerequisite: Algebra I and Geometry

**SOI TEST** Algebra II/Trigonometry provides a thorough treatment of advanced algebraic concepts through the study of functions, including parent functions, families of functions, and transformational graphing. Transformational graphing uses translations, reflections, dilations, and rotations, to generate a family of graphs from a parent graph. The continued study of equations, systems of equations, inequalities, and systems of inequalities builds on Algebra I concepts while polynomials, imaginary numbers in the complex number system, matrices, and sequences and series allow additional opportunities for modeling and practical applications.

The study of trigonometry includes trigonometric definitions, applications, equations, and inequalities. The connections between right triangle ratios, trigonometric functions, and circular functions are emphasized.

Graphing calculators and other emerging technologies are incorporated into instruction to enhance teaching and learning. Mathematical communication, reasoning, problem solving, critical thinking, and multiple representations are emphasized throughout the course.

**Statistics and Probability**

Grades: 10-12

**597700**

Credit: 0.5

Prerequisite: Algebra II

Elementary probability and statistics are studied with an emphasis on collecting data and interpreting data through numerical methods. Specific topics include the binomial and

normal distributions, probability, linear correlation and regression, and other statistical methods. Students are expected to understand the design of statistical experiments. They are encouraged to study a problem, design and conduct an experiment or survey, and interpret and communicate the outcomes. Through meaningful activities and simulations, students are provided with experiences that model the means by which data are collected, used, and analyzed. This course enables students to be wise users of statistical methods and more critical consumers of statistical materials.

The use of computers and calculators enhances the learning process and provides students with experiences working with emerging technologies.

**Discrete Mathematics** **599700**  
 Grades: 10-12 Credit: 0.5  
 Prerequisite: Algebra II

Discrete Mathematics involves applications using discrete variables rather than continuous variables. Modeling and understanding finite systems is central to the development of the economy, the natural and physical sciences, and mathematics itself.

This course introduces the topics of social choice as a mathematical application, matrices and their uses, graph theory and its applications, and counting and finite probability, as well as the processes of optimization, existence, and algorithm construction. Emerging technologies are incorporated into the curriculum as they become available.

**Advanced Functions and Modeling** **572000**  
 Grades: 10-12 Credit: 1  
 Prerequisite: Algebra II

Advanced Functions and Modeling provides opportunities for students to deepen understanding and knowledge of functions-based mathematics through investigations of mathematical models and interpretation/analysis of data from real-life situations. Problem solving and critical thinking provide the structure in which functions (polynomial, exponential, logarithmic, transcendental, and rational) are studied. Experimental design provides the foundation for data gathering, curve sketching, and curve fitting in order to provide a graphical interpretation of real world situations.

Graphing calculators and other emerging technologies, along with the precepts of transformational graphing, are incorporated into instruction to enhance teaching and learning. Mathematical communication, reasoning, problem solving, critical thinking, and multiple representations are emphasized throughout the course.

**Advanced Algebra/Precalculus** **585000**  
 Grades: 10-12 Credit: 1  
 Prerequisite: Algebra II

Advanced Algebra/Precalculus emphasizes polynomial, exponential, logarithmic, and rational functions, theory of equations, sequences and series, conic sections, limits, mathematical induction, and the Binomial Theorem. Trigonometry topics include triangular and circular definitions of the trigonometric functions, establishing identities, special angle formulas, Law of Sines, Law of Cosines, and solutions of

trigonometric equations. Constructing, interpreting, and using graphs of the various function families are stressed throughout the course of study. Students are encouraged to explore fundamental applications of the topics studied with the use of graphing calculators. Emerging technologies are incorporated into the curriculum as they become available.

**Mathematical Analysis, weighted 0.5** **586000**  
 Grades: 10-12 Credit: 1  
 Prerequisite: Algebra II/Trigonometry or  
 Advanced Algebra/Precalculus

Mathematical Analysis introduces mathematical induction, matrix algebra, vectors, and the Binomial Theorem. A detailed treatment of function concepts provides opportunities to explore mathematics topics deeply and to develop an understanding of algebraic and transcendental functions, parametric and polar equations, sequences and series, conic sections, and vectors. Mathematical Analysis also includes precalculus topics such as limits and continuity, the derivative of functions of a single variable, and curve sketching. The course of study is enhanced by making connections to the concepts presented to other disciplines.

Students routinely use graphing calculators as tools for exploratory activities and for solving rich application problems. Emerging technologies are incorporated into the curriculum as they become available.

**Computer Mathematics** **593000**  
 Grades: 10-12 Credit: 1  
 Co-requisite: Algebra II

Computer Mathematics provides students with experiences in workplace computer applications, personal finance, essential algebra skills necessary for college mathematics, and computer programming techniques and skills. Students solve problems that can be set up as mathematical models. Students develop and refine skills in logic, organization, and precise expression, thereby enhancing learning in other disciplines. Programming is introduced in the context of mathematical concepts and problem solving. Students define a problem; develop, refine, and implement a plan; and test and revise the solution.

**Computer Science A**  
**Advanced Placement, weighted 1.0** **595100**  
 Grades: 11-12 Credit: 1  
 Prerequisite: Computer Mathematics

AP Computer Science A is taught according to the syllabus for Computer Science A available through the College Entrance Examination Board. Major topics in the course include programming methodology, algorithms, and data structures. Topics are extended to include constructs, data types, functions, testing, debugging, algorithms, and data structures. The JAVA programming language is used to implement computer-based solutions to meaningful problems. Treatments of computer systems and the social implications of computing are integrated into the course.

Students have the opportunity to take the AP Computer Science A Exam in May with the possibility of earning college credit.

**Calculus AB**

**Advanced Placement, weighted 1.0**

**585100**

Grades: 11-12

Credit: 1

Prerequisite: Mathematical Analysis or  
Advanced Algebra/Precalculus

AP Calculus AB explores the topics of limits/continuity, derivatives, and integrals. These ideas are examined using a multi-layered approach including the verbal, numerical, analytical, and graphical analysis of polynomial, rational, trigonometric, exponential, and logarithmic functions and their inverses. The student is expected to relate the connections among these approaches. Students are also required to synthesize knowledge of the topics of the course to solve applications that model physical, social, and/or economic situations. These applications emphasize derivatives as rates of change, local linear approximations, optimizations and curve analysis, and integrals as Riemann sums, area of regions, volume of solids with known cross sections, average value of functions, and rectilinear motions. Emerging technologies are incorporated into the curriculum as they become available.

Students have the opportunity to take the AP Calculus AB Exam in May with the possibility of earning college credit.

**Calculus BC**

**Advanced Placement, weighted 1.0**

**586100**

Grades: 11-12

Credit: 1

Prerequisite: Mathematical Analysis or  
Calculus AB—AP

Advanced Placement Calculus BC is intended for students who have a thorough knowledge of analytic geometry and elementary functions in addition to college-preparatory algebra, geometry, and trigonometry. Although all of the elements of the AP Calculus AB course are included, the course provides a more rigorous treatment of these introductory calculus topics. The course also includes the development of the additional topics required by the College Entrance Examination Board in its syllabus for AP Calculus BC. Among these are parametric, polar, and vector functions; the rigorous definition of limit; advanced integration techniques; Simpson's Rule; length of curves; improper integrals; Hooke's Law; and the study of sequences and series. The use of the graphing calculator is fully integrated into instruction and students are expected to confirm and interpret results of problem situations that are solved using available technology. Emerging technologies are incorporated into the curriculum as they become available.

Students have the opportunity to take the AP Calculus BC Exam in May with the possibility of earning college credit.

**Statistics**

**Advanced Placement, weighted 1.0**

**598100**

Grades: 10-12

Credit: 1

Prerequisite: Algebra II

The AP Statistics course explores the concepts and skills according to the syllabus available through the College Entrance Examination Board. These topics include collecting and interpreting data through numerical methods, binomial and normal distribution, probability, linear correlation and regression, analysis of variance, and other descriptive statistical methods. Students should be able to transform data to aid in data interpretation and prediction and test hypotheses using appropriate statistics. Emerging technologies are incorporated into the curriculum as they become available.

Students have the opportunity to take the AP Statistics Exam in May with the possibility of earning college credit.

**Multivariable Calculus**

**583002**

**Multivariable Calculus—**

**Dual Enrollment, weighted 0.5**

**NOVA 583000**

Grades: 11-12

Credit: 1

Prerequisite: Calculus BC—AP

Multivariable calculus (also known as multivariate calculus) is the extension of calculus in one variable to calculus in several variables. Topics may include Euclidean 3-space, vector functions, derivatives and curvature and torsion,  $R^n$  space, surface normals, the Taylor polynomial, power and Taylor series, multivariable integration, vector function integration, and theorems by Gauss, Green, and Stokes.

# MUSIC

## Music Appreciation 260000

Grades 9-12 Credit: 1  
Prerequisite: None

Exploring the impact of music throughout the ages helps students become informed consumers and culturally aware participants in the 21<sup>st</sup> century. Students explore music in a wide variety of musical styles and time periods in this course. They learn about the relationship of music to art, architecture, and history as well as learning about music technology and its use in today's music. A lively curiosity and an interest in exploring the power of music are the only prerequisites for this class.

## Music Theory/History 262000

Grades 9-12 Credit: 1  
Prerequisite: None

The ability to understand and converse in the language of written music is the key to gaining a deeper understanding of the music that surrounds people. Students develop their keyboard skills through original musical compositions, build critical thinking skills, and compare musical examples. This course is recommended for students planning to pursue music in college and for the joy of creation to anyone who loves music. No performance is required.

## INSTRUMENTAL MUSIC COURSES

### Instrumental Methods 270000

Grades 9-12 Credit: 1  
Prerequisite: Teacher Recommendation/Audition

Students develop fundamental playing skills on musical instruments in a supportive environment in the Instrumental Methods class. They receive special coaching in the areas of tone production, music reading, fingerings, and playing in an ensemble. Public performances are not stressed, but a concert may be planned at the teacher's discretion.

### Performance Ensemble I 272000

Grades 9-12 Credit: 1  
Prerequisite: Teacher Recommendation/Audition

This performance-oriented band participates in concert appearances and Virginia Music Education Association events. Students continue the in-depth mastery of basic fundamentals of music while preparing pieces for performances. As a co-curricular ensemble, performances and rehearsals outside regular school hours are required.

### Performance Ensemble II 274000

Grades 9-12 Credit: 1  
Prerequisite: Teacher Recommendation/Audition

Students in this class expand their knowledge and skills of instrumental techniques, tone production, musical interpretation, and ensemble/solo performance to an advanced level.

Performance Ensemble II is a performance-oriented class, and students are active in numerous concerts and events. As a co-curricular ensemble, performances and rehearsals outside regular school hours are a requirement.

### Beginning Orchestra 275004

Grades 9-12 Credit: 1  
Prerequisite: None

This class is open to students who wish to learn how to play an orchestral string instrument but have no previous musical experience. Attention is focused on the development and understanding of fundamental string techniques including proper tone production, bow hold, hand positions, and aural and notation reading skills. Students are expected to supply their own instruments.

### Intermediate Orchestra 275003

Grades 9-12 Credit: 1  
Prerequisite: Successful completion of LCPS middle school orchestra program, High School level Beginning Orchestra, or teacher recommendation.

Students in the Intermediate Orchestra continue to develop proper tone production, style, playing technique, and appropriate ensemble skills while preparing musical selections for performance. As a co-curricular ensemble, performances outside regular school hours are a requirement.

### Advanced Orchestra 275002

Grades 9-12 Credit: 1  
Prerequisite: Successful completion of HS Intermediate level or teacher recommendation.

Technical and expressive skills increase in difficulty as students demonstrate mastery of a variety of articulations, bowings, positions, required scales, and arpeggios. Students at the advanced level perform, discuss, and critically evaluate characteristics of more elaborate musical compositions. This is a performance-oriented class, and students are active in numerous concerts and events. As a co-curricular ensemble, performances outside regular school hours are a requirement.

### Artist Orchestra 275001

Grades 9-12 Credit: 1  
Prerequisite: Successful completion of HS Advanced level or teacher recommendation.

Students who perform at the Artist level have built upon and mastered the previous high school skill levels of Beginning, Intermediate, and Advanced Orchestra. The Artist Orchestra student demonstrates exceptional skill level and is able to perform, discuss, analyze, and critically evaluate characteristics of more elaborate music compositions from a variety of styles, cultures, and historical periods. The ensemble is performance-oriented and is involved in concert appearances and county, regional, and state events. As a co-curricular ensemble, performances outside regular school hours are a requirement.



**Jazz Ensemble** **276000**  
 Grades 9-12 Credit: 1  
 Prerequisite: Teacher Recommendation/Audition

The basic fundamentals of jazz—theory, interpretation, improvisation, and other techniques—are covered in this performance-oriented class. As a co-curricular ensemble, performances and rehearsals outside regular school hours are a requirement.

**Beginning Guitar** **293000**  
 Grades 9-12 Credit: 1  
 Prerequisites: None

This class is open to students with no previous musical experience. The purpose of this course is to prepare students for a lifetime of guitar playing and music appreciation. Topics include standard musical notation; knowledge of the fretboard through fifth position; introduction to left and right hand techniques, including fingerstyle and pick technique; fundamentals of music; chords; basic song accompaniment; music history; listening; and understanding of guitar terminology. The class also includes solo and ensemble literature. A variety of musical styles are explored. Students must supply a standard nylon string classical guitar.

**Intermediate Guitar** **294000**  
 Grades 9-12 Credit: 1  
 Prerequisite: Successful completion of Beginning Guitar, Audition, or Teacher Recommendation

This class is open to students who have completed the LCPS guitar program in the middle school or have successfully completed the Beginning Guitar class at the high school level. Students who do not meet these prerequisites may be accepted by audition. The purpose of this course is to prepare students for a lifetime of guitar playing and music appreciation. Topics include completion of the fingerboard, refinement of right and left hand technique, advanced chord forms, scales, improvisation, and solo and ensemble repertoire. A variety of musical styles are explored. The ensemble is performance-oriented and is involved in concert appearances and county events. As a co-curricular ensemble, performances outside regular school hours are a requirement. Students must supply a standard nylon string classical guitar.

**Advanced Guitar** **295000**  
 Grades 9-12 Credit: 1  
 Prerequisites: Successful completion of Intermediate Guitar, Audition or Teacher Recommendation.

This class is open to students who have completed Intermediate Guitar. Students who have not completed Intermediate Guitar may be accepted by audition. The purpose of this course is to prepare students for a lifetime of guitar playing and music appreciation. Topics include mastery of the fingerboard, refinement of right and left hand technique, advanced chord forms, scales, improvisation, and advanced solo and ensemble repertoire. A variety of musical styles are explored. The ensemble is performance-oriented and is involved in concert appearances and county events. As a co-curricular ensemble, performances outside regular school hours are a requirement. Students must supply a standard nylon string classical guitar.

**Artist Level Guitar** **296000**  
 Grades 9-12 Credit: 1  
 Prerequisites: Successful completion of Advanced Guitar, audition and teacher recommendation.

Students who perform at the Artist level have built upon and mastered the previous skill levels of Beginning, Intermediate, and Advanced Guitar. Artist Level Guitar students perform, discuss, analyze, and critically evaluate characteristics of more elaborate music compositions from a variety of styles. The ensemble is performance-oriented and is involved in concert appearances and county events. As a co-curricular ensemble, performances outside regular school hours are a requirement. Students must supply a standard nylon string classical guitar.

**Music Theory**  
**Advanced Placement, weighted 1.0** **262100**  
 Grades 9-12 Credit: 1  
 Prerequisites: Successful completion of Music Theory/History (262000) and/or teacher recommendation

Students in Advanced Placement Music Theory learn to recognize, understand, analyze and describe elements of music theory through composition, aural skills (ear-training, dictation, and sight-singing), notation terminology, and score analysis. Students in AP Music Theory are highly encouraged to be active in some form of music performance or composition.

Students have the opportunity to take the AP Music Theory Exam in May with the possibility of earning college credit.

**VOCAL MUSIC COURSES**

**Mixed Chorus** **280000**  
 Grades 9-12 Credit: 1  
 Prerequisite: None

Students explore the fundamentals of singing as a group. Through participation in ensemble performances, students build self-confidence and the concept of teamwork. Through group performance, individual vocal skills are strengthened. Students will develop choral literacy by singing literature that is sacred and secular. Participation in ensemble performances is required.

**Small Vocal Ensemble** **278000**  
 Grades 9-12 Credit: 1  
 Prerequisite: Audition

The Small Vocal Ensemble offers unique opportunities for confident singers to work in a more intimate setting. Students receive specialized coaching in singing techniques and perform music in a wide variety of styles. Students will develop choral literacy by singing literature that is sacred and secular. Participation in ensemble performances is required.

**Advanced Chorus** **282000**  
 Grades 9-12 Credit: 1  
 Prerequisite: Audition

Students who are seeking a more intense performance setting thrive as they explore more complex singing techniques. Members of this group build their individual skills by performing in a variety of settings. Students will develop choral literacy by singing literature that is sacred and secular. Participation in concerts as well as certain choral competitions is required.

**Men's Chorus** **284000**  
 Grades 9-12 Credit: 1  
 Prerequisite: Audition

Students explore the techniques that enhance men's voices and perform music specifically for them. Members of this group build their vocal skills by performing in a variety of settings. Students will develop choral literacy by singing literature that is sacred and secular. Participation in concerts as well as certain choral competitions is required.

**Women's Chorus** **286000**  
 Grades 9-12 Credit: 1  
 Prerequisite: Audition

Students explore the techniques that enhance women's voices and perform songs written specifically for treble voices. Members of this group build their individual skills by performing in a variety of settings. Students will develop choral literacy by singing literature that is sacred and secular. Participation in concerts as well as certain choral competitions is required.

## NAVAL JUNIOR RESERVE OFFICERS TRAINING CORPS (NJROTC)

**Naval Science I** **848000**  
 Grades 9-12 Credit: 1  
 Prerequisite: None

**Offered at LCHS only\***

This introductory course to the NJROTC program is intended to stimulate enthusiasm for scholarship as a foundation for higher citizenship and leadership. The Junior Reserve Officer's Training Corps (JROTC) is a federal program sponsored by the United States Armed Forces in high schools across the United States.

The objectives of the program are to develop good citizenship and patriotism; develop self-reliance, leadership, and responsiveness to constituted authority; improve the ability to communicate well both orally and in writing; develop an appreciation of the importance of physical fitness; increase a respect for the role of the United States Armed Forces in support of national objectives; and to develop a knowledge of basic military skills. Specific curriculum focus is on naval science studies and leadership opportunities.

*\*Students enrolled at all other LCPS high schools may apply to attend the NJROTC program at LCHS on a space-available basis. Interested students should talk with their home school counselors for further information.*

**Naval Science II** **849000**  
 Grades 10-12 Credit: 1  
 Prerequisite: Naval Science I

**Offered at LCHS only\***

This second-year course builds on the general introduction provided in Naval Science I to further develop the traits of citizenship and leadership in cadets, introduce cadets to technical areas of naval science, and engender a deeper awareness of the vital importance of the world oceans to the continued well-being of the United States.

The course content includes ongoing instruction in leadership theory, Naval Orientation and Career Planning, Citizenship in the United States and Other Countries, Naval History from 1815 through 1930, Naval Ships and Shipboard Evolutions, Naval Weapons: Gunnery, Guided Missiles and Mines, Navigation Fundamentals and Rules of the Road, Small Boat Seamanship, Meteorology and Weather, and Survival Training and Orienteering.

*\*Students enrolled at all other LCPS high schools may apply to attend the NJROTC program at LCHS on a space-available basis. Interested students should talk with their home school counselors for further information.*

**Naval Science III** **847000**  
 Grades 11-12 Credit: 1  
 Prerequisite: Naval Science I and II

**Offered at LCHS only\***

This third-year course builds on the general information covered in Naval Science I and II and further develops the traits of citizenship and leadership in cadets, introduces cadets to technical areas of naval science, and engenders a deeper

awareness of the vital importance of the world oceans to the continued well-being of the United States. Students continue to develop their leadership skills through working as command and staff leaders. Additional communication skills are developed, including methods of instruction, preparation, and proper conduct of cadet-led classes. Human relations, group dynamics, orienteering, contemporary United States issues, and advanced military history studies are also included.

*\*Students enrolled at all other LCPS high schools may apply to attend the NJROTC program at LCHS on a space-available basis. Interested students should talk with their home school counselors for further information.*

**Naval Science IV** **845000**  
 Grade 12 Credit: 1  
 Prerequisite: Naval Science I, II, and III  
**Offered at LCHS only\***

This fourth-year course builds on the general information covered in Naval Science I, II, and III and develops leadership skills through working as command and staff leaders. Additional communication skills are developed, including methods of instruction, preparation, and proper conduct of cadet-led classes. Human relations, group dynamics, orienteering, contemporary United States issues, and advanced military history studies are also included.

*\*Students enrolled at all other LCPS high schools may apply to attend the NJROTC program at LCHS on a space-available basis. Interested students should talk with their home school counselors for further information.*

SCIENCE

*All of the science classes listed are laboratory science courses. Earth Science, Biology, and Chemistry all require the Virginia Standards of Learning tests near the end of the courses.*

*Students seeking a Standard diploma must complete a minimum of three science classes in two different disciplines. Students seeking Advanced Studies Diplomas must complete a minimum of four science classes in three different disciplines.*

*Because requirements for college admission and for specific majors in college differ greatly, students should check with colleges of interest to determine the science courses most appropriate to their goals of future education and potential college majors.*

**Earth Science—Honors, weighted 0.5** **640200**  
 Grades 9-10 Credit: 1  
 Prerequisite: None

**SQL TEST** Earth Science is a study of the interrelationships between the Earth’s composition, structure, processes, and history, and its atmosphere, meteorology, oceanography, and astronomy. Various scientists and their contributions are studied.

Students interpret various maps, charts, and tables and utilize technology, including GIS and GPS, to organize and analyze data. Facility in using many different kinds of maps and graphics is a

major outcome of learning earth science. Students also consider costs and benefits of using the Earth’s resources in problem-solving situations.

Honors Earth Science is designed as a rapidly paced, challenging course requiring advanced academic skills. Honors Earth Science students are expected to complete research and independent inquiry projects as a regular part of their course work.

*Students begin to develop skills needed to conduct in-depth scientific research during Honors Earth Science.*

**Earth Science—Academic** **640300**  
 Grades 9-10 Credit: 1  
 Prerequisite: None

**SQL TEST** Earth Science is a study of the interrelationships between the Earth’s composition, structure, processes, and history and its atmosphere, meteorology, oceanography, and astronomy. Various scientists and their contributions are studied.

Students interpret various maps, charts, and tables and utilize technology, including GIS and GPS, to organize and analyze data. Facility in using many different kinds of maps and graphics is a major outcome of learning earth science. Students also consider costs and benefits of using the Earth’s resources in problem-solving situations.

Academic Earth Science is designed as a challenging course requiring advanced reading and writing skills.

**Earth Science** **640500**  
 Grades 9-10 Credit: 1  
 Prerequisite: None

**SQL TEST** Earth Science is a study of the interrelationships between the Earth’s composition, structure, processes, and history and its atmosphere, meteorology, oceanography, and astronomy. Various scientists and their contributions are studied.

Students interpret various maps, charts, and tables and utilize technology to organize and analyze data. Facility in using many different kinds of maps and graphics is a major outcome of learning earth science. Students also consider costs and benefits of using the Earth’s resources in problem-solving situations.

**Biology—Honors, weighted 0.5** **650200**  
 Grades 9-10 Credit: 1  
 Prerequisite: None

**SQL TEST** Students taking Biology gain detailed knowledge of living systems. Areas of study include cellular organization and processes, molecular biology, classification of organisms, genetics, evolution, and ecosystems.

Students are expected to be able to demonstrate proper use of laboratory tools. Controlled experiments are performed and results are reported. The importance of science research is emphasized.

Honors Biology is designed as a rapidly paced, challenging course requiring advanced academic skills. *All Honors Biology students are expected to complete an in-depth, independent Science Research Project (SRP) as a required part of their course work.*

Honors Biology students may participate in the process leading to possible selection for participation in the Loudoun County Regional Science and Engineering Fair.

**Biology—Academic**

Grade 10

Prerequisite: None

**650300**

Credit: 1

**SOL Test** Students taking Biology gain detailed knowledge of living systems. Areas of study include cellular organization and processes, molecular biology, classification of organisms, genetics, evolution, and ecosystems.

Students are expected to be able to demonstrate proper use of laboratory tools. Controlled experiments are performed, and results are reported. The importance of science research is emphasized.

Academic Biology is designed as a challenging course requiring advanced reading and writing skills.

**Biology**

Grade 10

Prerequisite: None

**650500**

Credit: 1

**SOL Test** Students taking Biology gain detailed knowledge of living systems. Areas of study include cellular organization and processes, molecular biology, classification of organisms, genetics, evolution, and ecosystems.

Students are expected to be able to demonstrate proper use of laboratory tools. Controlled experiments are performed and results are reported.

**Biology****Advanced Placement, weighted 1.0**

Grades 10-12

Prerequisites: Biology—Honors or Academic and Chemistry (completed or taken concurrently). Students must attain a passing score on the Biology SOL Test.

**655100**

Credit: 1

This advanced course is a college-level, fast-paced course that follows the course outline of the College Board's AP program.

The course emphasizes cellular biology, biochemical processes of cellular respiration and photosynthesis, vertebrate anatomy and physiology, advanced genetics, evolution, plant anatomy and physiology, and ecology.

Students have the opportunity to take the AP Biology Exam in May with the possibility of earning college credit.

**Chemistry**

Grades 10-12

Prerequisites: Algebra I. Students must attain a passing score on the Algebra I SOL Test.

**660000**

Credit: 1

**SOL Test** Chemistry students develop an appreciation for the interaction between matter and energy.

Students investigate the structure, properties, and reactions of matter. Classroom study is balanced with laboratory experiences to deepen the students' understanding of Chemistry.

Analytical experimental investigations are conducted using the scientific method, and proper safety precautions are employed. Students investigate kinetic theory, the Periodic Table stoichiometry, redox equations, and the chemical equilibrium. Students report findings of both qualitative and quantitative data using effective communication skills, correct expression of significant figures and error, and factor labeling in problem solving.

Chemistry is designed as a challenging course requiring advanced reading and writing skills.

**Chemistry****Advanced Placement, weighted 1.0**

Grades 11-12

Prerequisites: Chemistry. Students must attain a passing score on the Chemistry SOL Test.

**665100**

Credit: 1

This advanced course is a college-level, fast-paced course in Chemistry that follows the course outline of the College Board's AP Chemistry program. The course includes many extended lab procedures. In addition, such fields as organic chemistry, biochemistry, nuclear chemistry, coordination complexes, and semi-micro qualitative analysis are introduced.

Students have the opportunity to take the AP Chemistry Exam in May with the possibility of earning college credit.

**Environmental Science**

Grades 11-12

Prerequisites: Two Lab Science Credits. (Earth Science and Biology suggested) *Successful performance on 2 science SOL tests (to be chosen from Earth Science, Biology, and/or Chemistry)*

**656000**

Credit: 1

Environmental Science provides the opportunity to synthesize information and knowledge of physics, chemistry, earth science, and biology while developing the Naturalist Intelligence.

Students gain an understanding of ecological concepts including air, water, soil, biological diversity, and human impacts.

Inquiry skills are developed through fieldwork, service projects, and collaborative investigation while using appropriate technology.

Because of the interdisciplinary focus of the course, students are challenged with diverse topics, rigorous reading requirements, and opportunities for written and oral presentations.

**Conceptual Physics**

Grades 10-12

Prerequisite: Algebra I. Students must attain a passing score on the Algebra I SOL Test.

**673000**

Credit: 1

Students build on basic physical science principles by exploring in depth the nature and characteristics of energy and its dynamic interaction with matter. Topics include mechanics, heat, electricity and magnetism, waves and optics, and nuclear energy.

The course draws connections between the concepts of physics and many everyday applications.

Students who are awarded a credit for Conceptual Physics cannot receive an additional credit for Physics 670000.

**Physics**

Grades 11-12

Prerequisite: Algebra II

**670000**

Credit: 1

This course uses a highly mathematical approach. Students learn and use many algebraic and trigonometric concepts while investigating physics content. Laboratory work includes graphical analysis. Topics include mechanics, heat, electricity and magnetism, waves and optics, the Special Theory of Relativity, and atomic structure.

Physics is designed as a challenging course requiring advanced reading, writing, and mathematical skills.

Students who have previously completed Conceptual Physics are not awarded another science credit for taking Physics 670000.



**Physics C**

**Advanced Placement**, *weighted 1.0*

**675100**

Grades 11-12

Credit: 1

Prerequisite: Physics

Co-requisite: Calculus

This course is a fast paced, college-level course in Physics that follows the course outline of the College Board's AP Physics program.

Emphasis is placed on mechanics, and the student has the option to study additional topics. Pre-Calculus and Calculus skills are used to develop concepts and solve problems.

Students have the opportunity to take the AP Physics C Exam in May with the possibility of earning college credit.

**Geospatial Science**

**670201**

**Geospatial Science—**

**Dual Enrollment**, *weighted 0.5*



**670200**

*(This course is part of an expanded pilot program and may not be offered at all high schools)*

Grade 12

Credit: 1

Prerequisite: None

Geospatial science involves the use of geographic information systems (GIS) which integrate hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically-referenced information. In this course, GIS is used to organize, analyze, and communicate spatial-data relationships.

In the first semester, students learn about GIS tools and acquire the essential skills necessary to use GIS software and hardware effectively. These computer/software skills form the foundation of the course and are used extensively as students conduct independent research later in the course. Teacher-directed activities gradually lead to more student-directed research.

*All students are expected to complete an in-depth research project as a required part of their course work during the second semester.*

Students may also choose a dual enrollment option offered through a partnership with James Madison University's (JMU) Department of Geology and Geography. Students have the opportunity to earn 3 college credits from JMU while completing the in-depth research project. The project (mandatory for all students regardless of whether they choose the dual enrollment option) requires students to apply all skills acquired during the first semester, identify a suitable independent research topic, and demonstrate their ability to complete and present their project to school faculty, members of the GIS community, and JMU faculty and staff. To earn the 3 credit hours, students must meet or exceed the project expectations established by JMU.

This course cannot be used to satisfy one of the science requirements for the Standard or Advanced Studies Diploma.

**Independent Science Research**, *weighted 0.5*

**680000**

**Independent Science Research—**

**Dual Enrollment**, *weighted 0.5*



**680100**

Grade 12

Credit: 1

Prerequisite: Completion of 3 Lab Sciences in different disciplines (to be chosen from Earth Science, Biology, Chemistry, Physics, or AP Sciences)

This elective science course is intended for seniors interested in continuing their study through an independent project in science, engineering, mathematics, or computer science. Students participating in Independent Science Research (ISR) should have a significant science background prior to entering the course. ISR projects are subject to considerable peer and teacher review during all phases of development.

The focus of this course is on sustained, scientific inquiry. Students are expected to take responsibility for project development, meeting timelines, collecting data, defending procedures, and presenting results.

The instructor advises students on the research process, information sources, and contacts. Instruction is also provided on such topics as data collection and presentation, statistical interpretation of results, protocols for research, and presentation skills.

All ISR students are required to participate in the process leading to possible selection for participation in the Loudoun County Regional Science and Engineering Fair.

*All students are expected to complete an in-depth research project as a required part of their course work during the second semester.*

Students may choose a dual enrollment option offered through a partnership with James Madison University (JMU), Integrated Science and Technology. Students have the opportunity to earn 3 college credits from JMU while completing the in-depth research project. The project (mandatory for all students (regardless of whether they choose the dual enrollment option) requires student to apply all skills learned during the first semester, identify a suitable independent research topic, and demonstrate their ability to complete and present their project to school faculty and to JMU faculty and staff. To earn the 3 credits, students must meet or exceed the project expectations established by JMU.

This course can be used to satisfy one of the science requirements for the Standard or Advanced Studies Diploma.



## SOCIAL SCIENCE AND GLOBAL STUDIES

### World History/Geography to 1500

**Pre-AP**, *weighted 0.5*

Sequenced for Grade 9

Prerequisite: None

**740900**

Credit: 1

**SQL TEST** Starting with the human communities of early world history, this course teaches students to think critically about large global patterns and themes and to compare human characteristics across time and geographic locations. Students learn about people in different places and environments from 8000 BCE to 1500 CE and gain understanding of the connections, and differences, between human beings as they study historical trends and events.

Since writing is a thinking process, all forms of writing, both formal and informal, are emphasized in this course. Students learn to understand and use primary sources as historical evidence to conduct research and produce essays.

This is a course in global history and serves as the foundation course for the 10<sup>th</sup> grade AP World History class.

### World History/Geography to 1500

**Academic**

Grade 9

Prerequisite: None

**740300**

Credit: 1

**SQL TEST** In this course students learn to think critically about world events and societies around the globe before the year 1500. They learn to think in an organized way to understand history and to express themselves in all forms of writing, both formal and informal.

This is a course in the human history of the world that asks the following questions: What changes and events have caused people to live the way they do today? What progress have humans made? What problems have humans faced? What problems still exist today?

### World History/Geography to 1500

Grade 9

Prerequisite: None

**740400**

Credit: 1

**SQL TEST** In this class students learn to think critically about world events and societies around the globe before the year 1500. They learn to think in an organized way to understand history and to express themselves in all forms of writing, both formal and informal.

This is a course in the human history of the world that asks the following questions and, with teacher guidance, helps students to answer them: What changes and events have caused people to live the way they do today? What progress have humans made? What problems have humans faced? What problems still exist today?

### World History/Geography

**Advanced Placement**, *weighted 1.0*

Grades 10-12 (Sequenced for Grade 10)

Prerequisite: World History/Geography I

**751000**

Credit: 1

**SQL TEST** Today individuals live in a global world that allows them to log on to a computer and talk live to other students in China, India, or South Africa. AP World History helps students understand how different societies developed the way they did and prepares students to live in a global, interconnected society.

In AP World History students expand their ability to think clearly and carefully about social and historical forces that have shaped their lives. They compare the roles of different groups of people, including young people, in different times and places.

Students learn to think in an organized way to understand history and to express themselves in all forms of writing, both formal and informal. They also have a chance to complete an inquiry-based project on a World History topic of personal interest.

This course teaches students to think critically and to develop the ability to use evidence to make arguments and draw conclusions.

Students have the opportunity to take the AP World History Exam in May with the possibility of earning college credit.

### World History/Geography 1500 to present

**Academic**

Grade 10

Prerequisite: None

**745300**

Credit: 1

**SQL TEST** Today individuals live in a global world that allows them to log on to a computer and talk live to other students in China, India, or South Africa. World History helps students understand how different societies developed the way they did and prepares students to live in a global, interconnected society.

In World History II students expand their ability to think clearly and carefully about social and historical forces that have shaped the world. They compare the roles of different groups of people, including young people, in different times and places. They learn to think in an organized way to understand history and to express themselves in all forms of writing, both formal and informal.

This course assists students in the study of modern human history by posing the questions: What changes and events have caused people to live the way they do today? What progress have humans made? What problems still exist today? What solutions to these problems can individuals of today offer?

### World History/Geography 1500 to present

Grade 10

Prerequisite: None

**745400**

Credit: 1

**SQL TEST** Today individuals live in a global world that allows them to log on to a computer and talk live to other students in China, India, or South Africa. World History helps students understand how different societies developed the way they did and prepares students to live in a global, interconnected society.

In World History II students develop their ability to think clearly and carefully about social and historical forces that have shaped their lives. They learn to compare the roles of different groups of people, including young people, in different times and places. They learn to think in an organized way to understand history and to express themselves in all forms of writing, both formal and informal.

This course assists students in the study of modern human history by posing the questions: What changes and events have caused people to live the way they do today? What progress have humans made? How will individuals cooperate with people across the globe to offer some solutions to today's problems?

**United States (U.S.) History**

**Advanced Placement, weighted 1.0**

**750100**

Grade 11

Credit: 1

Prerequisite: None

**SQL TEST** In AP U.S. History students expand their ability to think clearly and carefully about social and historical forces that have shaped their lives. They address questions such as: How did a nation whose Constitution first included the 3/5 Compromise eventually come to have an African-American President in 2012?

Students compare the roles of different groups of people, including young people, in different times and regions. Students continue to learn to think in an organized way to understand history and to express themselves in all forms of writing, both formal and informal.

In this class students are expected to develop their ability to use historical evidence to make arguments and draw conclusions and to improve their ability to think critically about the formation of the United States of America.

Students have the opportunity to take the AP U.S. History Exam in May with the possibility of earning college credit.

**United States and Virginia History**

**Academic**

**750300**

Grade 11

Credit: 1

Prerequisite: None

**SQL TEST** In U.S./Virginia History students expand their ability to think clearly and carefully about social and historical forces that have shaped their lives. Students compare the roles of different groups of people, including young people, in different times and regions. They learn to think in an organized way to understand history and to express themselves in all forms of writing, both formal and informal.

In this class students are expected to develop their ability to independently use historical evidence to make arguments and draw conclusions. This course helps students improve their ability to think critically while examining how the people of America have met needs, formed communities, and developed into new, diverse, and complex societies.

**United States and Virginia History**

**750400**

Grade 11

Credit: 1

Prerequisite: None

**SQL TEST** In U.S./Virginia History students develop their ability to think clearly and carefully about social and historical forces that have shaped lives of today. Students compare the roles of different groups of people, including young people, in different times and regions of the country. They learn to think in an organized way to understand history and to express themselves in all forms of writing, both formal and informal.

In this class, students are expected to develop the ability to independently use historical evidence to make arguments and draw conclusions. This course supports students as they improve their ability to think critically and to examine how the people of America have met their needs, formed communities, and developed into new, diverse, and complex societies.

**Combination United States Government and Comparative Government**

**Advanced Placement, weighted 1.0**

**762000**

Grade 12

Credit: 1

Prerequisite: None

*This course combines AP U.S. and AP Comparative Government. The College Board curricula for both courses have been woven together to make this one coherent, year-long course. Students who seek the 1.0 weight must pass the entire year-long course. Students are encouraged to take both the AP U.S. Government and the AP Comparative Government exams in May. All students are prepared for both exams.*

In AP Government students expand their ability to think clearly and carefully about social and political forces that shape their lives. Concepts which are considered include life under a political system where people are "guilty until proven innocent" and what it would be like to have an election where each office had only one candidate; these are different interpretations of "democracy." In this class, students study the principles of government in the U.S. and the institutions and laws used to make government work. They also compare US systems and laws to those of other countries so students can examine how different societies define "justice" and those societies' notions of civil rights and civic responsibility.

Through the examination and comparison of government systems, students develop and improve their analytical skills, and they improve their ability to think in an organized way about very complex issues that involve many different types of people, groups, and institutions. Students also improve their communication skills since government is a social topic. Students' analytical writing and active listening skills are significantly developed as they improve their ability to participate in political debate with fairness and respect for diverse perspectives.

Students have the opportunity to take the AP U.S. Government and Comparative Government Exams in May with the possibility of earning college credit.

**United States/Virginia Government****Academic**

Grade 12

Prerequisite: None

**760300**

Credit: 1

In U.S./Virginia Government students expand their ability to think clearly and carefully about social and political forces that shape their lives. They continue to develop their thinking in an organized way for clear communication in all forms of writing, both formal and informal. They strengthen their independent ability to describe and make conclusions about government structures and policies.

This course helps improve students' ability to think critically and to examine how the people of America meet their needs for constructive political life in a diverse society. Democracy depends on citizens' paying attention and getting involved. The course prepares students to be thoughtful and active citizens of the U.S.

**United States/Virginia Government**

Grade 12

Prerequisite: None

**760400**

Credit: 1

In this course the teacher helps students develop their ability to think clearly and carefully about social and political forces that shape their lives. In learning about the structures and theories behind the American Constitutional system, students increase their understanding of the impact the U.S. Constitution has on the diverse society.

Students continue to develop their thinking in an organized way for clear communication in all forms of writing, both formal and informal. Democracy depends on individuals paying attention and getting involved.

The course prepares students to be thoughtful and active citizens of the U.S.

**Economics**

Grades 10-12

Prerequisite: None

**782700**

Credit: 0.5

In this course, students discover that basic economic principles are at work in life every day, and an understanding of these principles helps them to make better economic choices.

Students also learn how governments and private financial institutions impact their economic choices by the decisions they make about "who gets what" in a world with scarce resources.

*Beginning with the 9<sup>th</sup> grade that entered high school in 2011-2012, all students must take a one-semester course in Economics and a one-semester course in Personal Finance in order to graduate. This course fulfills the "Economics" portion of the one-year requirement for graduation.*

## SOCIAL SCIENCE AND GLOBAL STUDIES ELECTIVES

**Survey of African History****741210****Survey of African History—****Dual Enrollment, weighted 0.5****NOVA 741200**

Grades 11-12

Credit: 1

Prerequisite: None

Much of African history as people hear it consists of information beginning with when Europe began to interact with the continent of Africa, omitting much of the complete story of rich traditions, major events, and diverse cultures that stretch back far in time and across a huge land mass.

Students who want to learn about the history of this gigantic and diverse place and would like to look at history "through African eyes," should select this course. Students should be prepared to read, discuss, and write. Successful completion of this course allows students to earn college credit offered through Northern Virginia Community College (NOVA).

This course may not be offered at all schools.

**Survey of Latin American History****781100****Survey of Latin American History—****Dual Enrollment, weighted 0.5****NOVA 781000**

Grades 11-12

Credit: 1

Prerequisite: None

Latin America has more than 23 countries and even more cultural backgrounds. The largest country in Latin America does not speak Spanish but speaks Portuguese. Often the U.S.'s closest geographic neighbors are lumped together as one culture and considered to have only one "history." Complex histories, cultures, and social systems exist in this fascinating area, and they require serious study and examination to improve cultural understanding.

Students who want to learn about the history of this gigantic and diverse place and would like to look at history through the diverse perspectives of Latin America, should select this course. They should be prepared to read, discuss, write, and learn. Successful completion of this course allows students to earn college credit through NOVA.

This course may not be offered at all schools.

**Economics—Micro and Macro****Advanced Placement, weighted 1.0****782000**

Grades 11-12

Credit: 1

Prerequisite: None

*Students wishing to fulfill the "Economics" portion of the Economics and Personal Finance graduation requirement with this course must complete both AP components—Micro and Macro.*

The **microeconomic** component of this AP course provides students with a thorough understanding of the principles of economics that apply to individual decision makers, both consumers and producers, within the economic system. The primary focus of the course is to help individuals develop an understanding of markets and the role the government plays in promoting greater efficiency and equity in the economy.

The **macroeconomic** component of this course provides students with a thorough understanding of the principles of

economics as they apply to the economic system as a whole. This portion of the course focuses on national income and price-level determination and develops students' familiarity with economic performance measures, the financial sector, economic growth and stabilization policies, and international economics.

In this course students are required to think critically about the complex issues surrounding a world with limited resources.

Students have the opportunity to take the AP Micro and Macro Economics Exams in May with the possibility of earning college credit.

**Global Social Issues** **775000**  
 Grades 11-12 Credit: 0.5  
 Prerequisite: None

In Global Social Issues, students learn that the people on this planet have numerous differences, yet face issues and challenges that are connected. Issues that may seem to impact only one area may actually impact other people and societies across the globe.

In this course students study how humans behave and interact with each other. In some instances, people and nations work together on environmental concerns; and in others, people and nations work at cross-purposes on the environment. On other issues, such as women's rights, students discover a wide spectrum of views and approaches according to a particular society's culture and history.

**Human Geography**  
**Advanced Placement, weighted 1.0** **741100**  
 Grades 11-12 Credit: 1  
 Prerequisite: None

AP Human Geography helps students analyze the world and their relationship to it. Students learn to look for geographic causes for events in different regions, to compare geographic features and their effects on human life, and see how their lives are connected to and affected by human and geographic conditions all over the globe. In this course students write, read, discuss, and present issues of global and local importance. Students also learn about an important tool for Human Geography: GIS software. AP Human Geography prepares individuals to be part of the solution to the challenges facing humanity on Earth in the 21<sup>st</sup> Century.

Students have the opportunity to take the AP Human Geography Exam in May with the possibility of earning college credit.

**Modern International Relations** **784700**  
 Grades 11-12 Credit: 0.5  
 Prerequisite: None

In this course students examine the ways in which people and nations relate to each other and develop their own ideas about how the new global situation should be addressed. Students in this course must closely read and listen to the news, too, because people are moving and taking actions all the time in today's world, and lives are affected by people or events from beyond the national borders.

This course assists students in learning how they can contribute to the solutions to international problems, and develop their own abilities to function on the increasingly interconnected globe.

**Psychology** **786700**  
 Grades 11-12 Credit: 0.5  
 Prerequisite: None

Psychology provides students with ideas about how to address many questions regarding human behavior. Psychologists provide biological, emotional, and situational reasons as answers to questions about human behavior. By studying those reasons, students gain better understanding of why people do what they do and develop the ability to generate their own answers.

Psychology helps students think about human behavior in an organized way.

**Psychology**  
**Advanced Placement, weighted 1.0** **787100**  
 Grades 11-12 Credit: 1  
 Prerequisite: None

Psychologists study all aspects of human behaviors—those humans have in common with animals and those humans do not and those that range from peace-making to the microscopic functioning of a nerve cell. Students become psychologists in this course and expand their minds to analyze human behavior in methodical, organized, large-scale, small-scale, inquiry-based approaches. Students need to work hard to read about, understand, write about, discuss, and explain the ways humans behave.

Class participants study how humans learn, how humans inherit traits from their parents, how humans act in groups, why humans have emotions, and how humans sometimes engage in behaviors that are destructive.

Students have the opportunity to take the AP Psychology Exam in May with the possibility of earning college credit.



**The World of Ideas**

Grades 11-12

Prerequisite: None

**741300**

Credit: 0.5

This course focuses on three main philosophical questions:

- Is there a purpose to life?
- What is the definition of a human being?
- How can human beings know anything for sure?

In this course students explore their answers to these questions by studying the answers given to them by a diversity of cultures and traditions across the globe.

Students in this course explore the world of ideas by taking this course and may develop some ideas about their place in the universe—or may generate many more questions that they would like to explore.

**World Religions**

Grades 11-12

Prerequisite: None

**741400**

Credit: 0.5

Teenagers of Aborigine heritage in Australia have traditionally gone through a “rite of passage” called a “Walkabout.” They are meant to have a spiritual awakening in the Outback by surviving in the desert without supplies, and without even clothing, for one to two weeks. Students’ own backgrounds may call for a “rite of passage” for them. Why do religions have “rites of passage” and other ceremonies? Why do they have *different types* of ceremonies?

In this course students explore questions like those above and examine and compare the practices, faiths, and literature of the major religions in the world today. They do so with readings, videos, creative and analytical writing, and discussion. The many beautiful, meaningful, and inspirational forms of religion in the world explain much about the world views and cultures of the diversity of people living on the globe today. Students who take this course improve their understanding of the people who share this planet with them.

**SPECIAL EDUCATION****Basic Skills**

Grades 9-12

**080040**

Credit: 0.5 per semester, may be taken two semesters per year

Prerequisite: None

*Graded as Pass or Fail; not used in Cumulative Grade Point Average.*

Basic Skills is an elective course for special education students receiving resource or self-contained services for a full period and who require more intensive work on identified needs as noted in their Individualized Education Plan (IEP).

Students are introduced to a variety of strategies and techniques to enable them to better achieve in school. Strategies and techniques may include time management, study skills, note taking, and self advocacy, based on the student’s needs. The teacher may use one or more content areas (e.g., language arts, math, science) to teach students how to adapt these strategies and techniques to different situations.

Because this is a developmental course, Basic Skills may be retaken for credit each semester for up to four years.

**Career Pathways**

Grades: 10-12

**080570**

Credit: 1

Prerequisite: None

Career Pathways is an elective course for students with IEPs. The course focuses on goal setting and self-determination as they relate to transitioning from secondary to post-secondary life.

Students develop skills necessary for post-secondary success through use of the Life Centered Career Education Curriculum. Students may participate in school-based or community work experiences as a part of this course.

The course is taught based upon individual student needs and interests; therefore, it may be taken more than once for consecutive, elective credit.

**Personal Living and Finance\***

Grades: 9-12

**591070**

Credit: 1 elective credit\*

Prerequisite: Mathematics 8

Personal Living and Finance is a course intended to help students prepare for the world of work. Practical applications are used throughout the course to provide real-world examples of computation. Simulations in the course include such topics as buying a car, renting an apartment, managing a budget, taxes, using credit wisely, investments, and insurance.

*\*This course may be used to fulfill the mathematics requirements for a Modified Standard Diploma.*

**Reading Workshop Strategies**

Grades 9-12

Prerequisite: None

**Strategies 1: 101100****Strategies 2: 101200****Strategies 3: 101300****Strategies 4: 101400**

Elective Credit:1

Reading Strategies is an elective course for students with IEPs who need specific instruction in reading and reading strategies. The course is taught based upon students’ individual needs.



## TECHNOLOGY EDUCATION

**Aerospace Science** **810000**  
 Grades 10-12 Credit: 1

Aerospace Science is a Northern Virginia Regional course designed to introduce students to the technologies of aeronautics and space sciences. The course is a study of the interrelationship between aeronautics and space science.

Students use a hands-on approach to study concepts including aerodynamic principles, aircraft and spacecraft technologies, meteorology and space environments, commercial applications, administration, and historical perspectives. Field experiences expose students to career paths in the aerospace industry and governmental agencies.

*This course counts as an elective credit.*

**Technology Education I** **851000**  
 Grades 9-12 Credit: 1

This course is designed to introduce students to the world of technology and design. Students explore the use of cutting-edge technology in the production of goods. Economic and social implications are considered. Students move through the problem-solving process to plan an organization and production facility, design and produce a prototype, develop a marketing plan for the product, and evaluate potential success. Students are expected to follow strict safety requirements when elements of instruction take place in the Technology Education production lab. Virginia's Workplace Readiness competencies are also emphasized.

**Technology Education II** **852000**  
 Grades 10-12 Credit: 1

Prerequisite: Technology Education I

Students focus on industrial/technical materials and processes as they fabricate usable products and conduct experiments. Students explore and master multiple production materials including plastics, metals, woods, ceramics, and composites. Students explore the material and the properties of each, investigate use of the materials in products, and experiment with the development of products, using the materials. Students are expected to follow strict safety requirements when elements of instruction take place in the Technology Education production lab. Virginia's Workplace Readiness competencies are also emphasized.

**Computer Aided Drafting & Design I** **853000**  
 Grades 10-12 Credit: 1

Prerequisite: None

Computer Aided Drafting & Design provides the student with the basic principles and theories underlying graphic representations, which are common to all areas of industrial work.

Learning units and required drawings emphasize the basic skills in computer assisted drawing (CADD) and related areas. Occupational information is also presented.

**Computer Aided Drafting & Design II** **854000**  
 Grades 11-12 Credit: 1

Prerequisite: CADD I

This course is designed to give the college-bound student an opportunity to explore specific fields related to Computer Aided Drafting & Design. These areas are architectural, electrical, sheet metal, structural, topographical, and mechanical. The student then chooses areas of interest and pursues independent, in-depth studies.

**Applied Technology I** **856000**  
 Grades 9-12 Credit: 1

Prerequisite: None

Students acquire a foundation in technological material, energy, and information and apply processes associated with the technological thinker. Challenged by laboratory activities, students create new ideas and innovations, build systems, and analyze technological products to learn further how and why technology works. They work in groups to build and control systems using engineering design in the development of a technology. Technologies explored include Biotechnology, Communications, Construction, Manufacturing, Power and Energy, and Transportation.

**Applied Technology II** **857000**  
 Grades 10-12 Credit: 1

Prerequisite: Applied Technology I

Students work with a variety of computers, materials, and systems to improve their skills and knowledge. Groups work together, applying mathematics, science, and communication concepts on a project that combines systems such as production, energy, communication, transportation, biotechnology, and other technologies. Thematic activities engage students in community problems where they transfer the technological method to address recycling, space exploration, and housing.

**Applied Technology III** **858000**  
 Grades 11-12 Credit: 1

Prerequisite: Applied Technology II

Technology Assessment is offered as a capstone course for students in high school. Students use their knowledge and abilities in technology, mathematics, science, and other disciplines to analyze the impacts of technological devices and systems on the world. Students use information they acquire through activities and research to predict the future. They use computers and assessment activities to analyze products and systems to determine their possible impact. They design and present their newly created products or systems.

## OTHER

**AVID 1** **092000**  
Grade 9 Credit: 1

Prerequisite: None  
*LCHS, PVHS, and THS Only*

This course prepares students for entrance into colleges and universities. The course emphasizes critical reading strategies, analytical writing, collaborative discussion strategies, tutorial inquiry study groups, preparation for college entrance and placement exams, college study skills and test-taking strategies, note taking, and research. Students also develop time management and organization skills as part of the AVID 1 course.

**AVID 2** **093000**  
Grade 10 Credit: 1

Prerequisite: None; AVID 1 recommended  
*LCHS, PVHS, and THS Only*

This course prepares students for entrance into colleges and universities. The course emphasizes critical reading strategies, analytical writing, collaborative discussion strategies, tutorial inquiry study groups, preparation for college entrance and placement exams, college study skills and test-taking strategies, note taking, and research. Students also investigate college and career options as part of the AVID 2 course.

**AVID 3** **094000**  
Grade 11 Credit: 1

Prerequisite: AVID 2  
*LCHS, PVHS, and THS Only*

This course prepares students for entrance into colleges and universities. The course emphasizes critical reading strategies, analytical writing, collaborative discussion strategies, tutorial inquiry study groups, preparation for college entrance and placement exams, college study skills and test-taking strategies, note taking, and research. Students also investigate the college application process and develop a portfolio of sample college applications and sample essays.

**AVID 4** **095000**  
Grade 12 Credit: 1

Prerequisite: AVID 3  
*LCHS and PVHS Only*

This course prepares students for entrance into colleges and universities. The course emphasizes critical reading strategies, analytical writing, collaborative discussion strategies, tutorial inquiry study groups, preparation for college entrance and placement exams, college study skills and test-taking strategies, note taking, and research. Students also finalize college application requirements, with a particular emphasis on investigating options for financial aid. In addition, students conduct and present a culminating research project.

**Economics and Personal Finance****On-line Course (36 weeks)**

Grades 10-12  
Prerequisite: None

**823V00**

Credit: 1

Students will learn how to navigate the financial decisions they must face and to make informed decisions related to career exploration, budgeting, banking, credit, insurance, spending, taxes, saving, investing, buying/leasing a vehicle, living independently, and inheritance. Development of financial literacy skills and an understanding of economic principles provide the basis for responsible citizenship and career success. In addition to developing personal finance skills, students in the 36-week on-line course also study basic occupational skills and concepts in preparation for entry-level employment in the field of finance.

This course will be taught during the regular school day with an assigned teacher-facilitator. This course incorporates all economic and financial literacy objectives included in the *Code of Virginia* §22.1-200-03B. This 36 week course is a graduation requirement beginning with the class of 2015.

**Personal Finance**

Grades 10-12  
Prerequisite: None

**825000**

Credit: 0.5

Students learn how to navigate the financial decisions they must face and to make informed decisions related to career exploration, budgeting, banking, credit, insurance, spending, taxes, saving, investing, buying/leasing a vehicle, living independently, and inheritance. Development of financial literacy skills and an understanding of economic principles provide the basis for responsible citizenship and career success.

In addition to developing personal finance skills, students also study basic occupational skills and concepts in preparation for entry-level employment in the field of finance.

The course incorporates all economic and financial literacy objectives included in the *Code of Virginia* §22.1-200-03B. This semester course is a graduation requirement beginning with the class of 2015.

**SAT Preparation**

Grades 10-12  
Prerequisite: None

**071000**

Credit: 0.5

This course is designed to help students spend concentrated time and effort understanding the patterns and strategies needed to understand and prepare for the SAT Reasoning Test, a nationally standardized college admissions test.

Instruction focuses on the test design, practice, analysis of results, and instruction in areas of weakness. Three main areas of study include critical reading, mathematical reasoning, and writing.

The course is graded as a "pass"/"fail" elective, based on the student's active participation in the class and completion of assignments.

Priority is given to seniors for the first semester and to juniors during second semester. Interested sophomores may have access if space permits.

# LOUDOUN COUNTY PUBLIC SCHOOLS ACADEMY OF SCIENCE

The mission of the LCPS Academy of Science (AOS) is to provide an academic environment where students are encouraged to develop creative scientific endeavors of their own design while having the opportunity to pursue a rich, well-rounded high school experience. A student at AOS acquires the skills to ask sophisticated scientific questions and conduct research and experimentation; to explore the interconnections between the sciences, math, and the humanities; to read, write, and communicate at a level that is required of university students; and to develop perspectives to assess the impact of scientific advancements on society.

The cornerstone of science preparation is a 9<sup>th</sup>/10<sup>th</sup> grade integrated science program which blends the physical sciences of physics, chemistry, and earth science into a seamless, inquiry-based lab course in preparation for AP coursework. The goal of the lab program is student-designed investigations coupled to an in-depth writing/scoring rubric. In addition, sophomores begin instruction in basic research techniques to be followed by two years of research in a topic of their choosing. The math program offers courses from Algebra and Trigonometry through Multivariable Mathematics. All courses have a heavy component of statistics and modeling and are taught in terms of practical application in order to coincide with the science program.

AOS students are selected through an application process. Rising 9<sup>th</sup> grade students are invited to attend after a competitive process that evaluates test scores, academic achievements, writing samples, teacher recommendations, and self-reported interests and activities. Student motivation and interest in science are the most valuable characteristics of AOS students. Highly motivated students who are consistent, dedicated learners have the greatest chance of success.

Accepted students are required to enroll as full-time students in LCPS. Students attend AOS on alternating days, with the opposite day being spent at their home high school. Students are required to take specific classes at AOS in Grades 9 and 10, but begin to have choices including Advanced Placement (AP) classes in Grades 11 and 12. AOS students may elect to take additional AP math and science classes at the home school. All other content area classes are taken at the home school.

At a minimum, students must be enrolled in Algebra I during Grade 8 to be considered for admission to AOS. Geometry is also highly recommended; however, it may be completed during summer school prior to Grade 9 or 10.

Students planning on AOS should work closely with their counselors to develop a "Plan of Studies" which allows them to complete graduation requirements and plan for electives. Possible scheduling conflicts may necessitate the need to choose among options. Selecting a world language, such as Spanish, where many sections of advanced levels are offered helps reduce scheduling conflicts. Singleton electives may be impossible for AOS students to schedule at the home school every year. Some AOS students may not be able to enroll in every elective desired at the home school.

Interested students should visit the AOS homepage for the most current information concerning the application process: [www.lcps.org/aos](http://www.lcps.org/aos). District-wide information sessions and open house programs for prospective students are held prior to the application deadline.

The LCPS AOS, located at Dominion High School, opened in September, 2005, and expanded in September 2006 to include a program of studies for Grades 9 through 12. *Loudoun County provides transportation for all students who attend AOS.*

Any questions about AOS and the application process should be directed to the Academy of Science office, 571-434-4470.

## HIGH SCHOOL PLAN OF STUDIES FOR AOS COURSES

GRADE 9	GRADE 10	GRADE 11	GRADE 12
<b>AOS Integrated Science I &amp; Integrated Science II</b> (Earth Science, Chemistry, Physics)	<b>AOS Integrated Science III</b> (students will take SOL for Earth Science & Chemistry)	<b>AOS Biology</b>	<b>AP Sciences</b> (Chemistry, Biology, Physics, Environmental)
<b>AOS Analytic Geometry, Functions, and Trigonometry with Transformations</b> (Students take SOL for Algebra II)	<b>AOS Pre-Biosciences Analysis</b> or <b>AOS Pre-Physical Sciences Analysis</b>	<b>AOS AB Calculus with Statistics</b> or <b>AOS BC Calculus with Statistics</b>	<b>AOS AB Calculus AP with Statistics</b> or <b>AOS BC Calculus AP with Statistics</b> or <b>AOS Multivariable Calculus</b>
	<b>AOS Sophomore Science Research</b>	<b>AOS Junior Science Research</b>	<b>AOS Senior Science Research</b>

## AOS SCIENCE COURSES

**AOS Integrated Science I**, *weighted 0.5* **664900**  
Grade 9 Credit: 1

**SOL TEST** This course is the first in a series of integrated science courses (two-year sequence of courses) designed for AOS students. Students study the physical sciences, physics, chemistry, and earth science as an integrated progression of science topics and learn content typically taught in these courses. The course is inquiry-based with much of the content learned through laboratory exercises, many of which are student-designed. Students take the Earth Science and Chemistry SOL tests during the AOS Integrated Science course progression. AOS Integrated Science I, II, and III prepare students for the advanced study of physical sciences in the junior and senior years. This course is required for all AOS freshman.

**AOS Integrated Science II**, *weighted 0.5* **645900**  
Grade 9 Credit: 1

Co-requisite: AOS Integrated Science I

**SOL TEST** This course is the second in a series of integrated science courses (two-year sequence of courses) designed for AOS students. Students study the physical sciences, physics, chemistry, and earth science as an integrated progression of science topics and learn content typically taught in these courses. The course is inquiry-based with much of the content learned through laboratory exercises, many of which are student-designed. Students take the Earth Science and Chemistry SOL tests during the AOS Integrated Science course progression. AOS Integrated Science I, II, and III prepare students for the advanced study of physical sciences in the junior and senior years. This course is required for all AOS freshman.

**AOS Integrated Science III**, *weighted 0.5* **654900**  
Grade 10 Credit: 1

Prerequisite: AOS Integrated Science I and II

**SOL TEST** This course is the third in a series of integrated science courses (two-year sequence of courses) designed for AOS students. Students study the physical sciences, physics, chemistry, and earth science as an integrated progression of science topics and learn content typically taught in these courses. The course is inquiry-based with much of the content learned through laboratory exercises, many of which are student-designed. Students take the Earth Science and Chemistry SOL tests during the AOS Integrated Science course progression. AOS Integrated Science I, II, and III prepare students for the advanced study of physical sciences in the junior and senior years. This course is required for all AOS sophomores.

**AOS Biology**, *weighted 0.5* **652900**  
Grade 11 Credit: 1

The AOS Biology course is the next logical step for students who have spent two years in an integrated, inquiry-based science program. AOS Biology is a rigorous course preparing students for college level work. The approach of this course is a project/problem-based program where a scientific dilemma is posed to students; the students identify what they need to know

in order to answer the question; the teacher leads them through the content they need in order to answer the question; and lab activities are relevant to the topic covered. Biology is a required class for AOS students in Grade 11. Students may select either AOS Biology or AP Biology. Students may also take these classes in a series: AOS Biology in Grade 11 and AP Biology in Grade 12.

**AOS Sophomore Science Research**, *weighted 0.5* **651900**  
Grade 10 Credit: 1

Prerequisite: AOS Integrated Science I and II

In this course students conduct a series of interdisciplinary science research activities designed to involve students in the application and use of inquiry-based methodology and to learn the use of techniques, equipment, and protocols typically used in scientific research laboratories. This course also enhances the ability of students to read and write scientific papers at the publication level. During the second semester, students begin work on a science research project of their own design that can be continued throughout their years as an AOS student. Sophomore Science Research is offered in conjunction with AOS Integrated Science III. This course is required for all AOS sophomores.

**AOS Junior Science Research**, *weighted 0.5* **661900**  
Grade 11 Credit: 1

Students continue to conduct interdisciplinary science research activities using inquiry-based methodology and increase their skill level with laboratory techniques and protocols in this course. This course also enhances the ability of students to read and write scientific papers at the publication level. Based on their interests, students begin to develop a research plan for an independent science research project that they complete in the Senior Science Research course. With a faculty mentor, they conduct a literature search, develop laboratory protocols, develop a materials list, create a budget, and work as a bench scientist. Regular presentation of results is an expectation for all research students. While it is intended that most of the bench-work can be conducted at AOS, some students interact with local scientists who act as mentors during both the school year and summer.

**AOS Senior Science Research**, *weighted 0.5* **671900**  
Grade 12 Credit: 1

In this course students continue to conduct interdisciplinary science research activities using inquiry-based methodology and increase their skill level with laboratory techniques and protocols. This course also enhances the ability of students to read and write scientific papers at the publication level. Students in senior research continue their work on the plan created during the junior research course. They conduct their bench-work with the guidance of a faculty mentor. Regular presentation of results is an expectation for all research students. While it is intended that most of the bench-work can be carried out at AOS, some students interact with local scientists who act as mentors during both the school year and summer.



**AOS Biology****Advanced Placement, weighted 1.0****664100**

Grades 12

Credit: 1

This advanced course is a college-level, fast-paced course that follows the course outline of the College Board's AP Biology program. The course emphasizes cellular biology, biochemical processes of cellular respiration and photosynthesis, vertebrate anatomy and physiology, advanced genetics, evolution, plant anatomy and physiology, and ecology.

Students have the opportunity to take the AP Biology Exam in May with the possibility of earning college credit.

**AOS Environmental Science****Advanced Placement, weighted 1.0****674100**

Grade 12

Credit: 1

This advanced course is a college-level, fast-paced course in Environmental Science that follows the course outline of the College Board's AP Environmental Science program. The course includes field work and many extended lab procedures. The course emphasizes population biology; ecosystems; geologic and earth science concepts; atmospheric science; land and water use topics including energy and energy use, consumption, and conservation, and pollution; and global change.

Students have the opportunity to take the AP Environmental Science Exam in May with the possibility of earning college credit.

**AOS Chemistry****Advanced Placement, weighted 1.0****669100**

Grade 12

Credit: 1

This advanced course is a college-level, fast-paced course in Chemistry that follows the course outline of the College Board's AP Chemistry program. The course includes many extended lab procedures. In addition, such fields as organic chemistry, biochemistry, nuclear chemistry, coordination complexes, and semi-micro qualitative analysis are introduced.

Students have the opportunity to take the AP Chemistry Exam in May with the possibility of earning college credit.

**AOS Physics****Advanced Placement, weighted 1.0****662100**

Grade 12

Credit: 1

This course is a college-level, fast-paced course in that follows the course outline of the College Board's AP Physics program. Emphasis is placed on mechanics, and the student has the option to study additional topics. Pre-calculus and calculus skills are used to develop concepts and solve problems.

Students have the opportunity to take the AP Physics Exam in May with the possibility of earning college credit.

**AOS MATH COURSES****AOS Analytic Geometry, Functions,****and Trigonometry with Transformations, weighted 0.5****541300**

Grade 9

Credit: 1

**SOL TEST** This course begins with an introduction to transformations and matrices with a sampling of applications. This early work includes several topics in analytic geometry. The early work is then integrated into a study of the creation and interpretation of linear and quadratic models for data. The work with quadratics includes a transformations-based introduction to the complex number system. Transformation ideas are also applied to provide a full introduction to triangle trigonometry with applications. Modeling ideas are extended with the introduction of a variety of the families of exponential, logarithm, and power functions to describe patterns in a broader range of data sets. Criterion for testing the fit of models to data is explored. The overriding aim of this course is to help students focus on the difference between knowing how to perform special techniques and understanding the underlying mathematics so that the techniques can be applied in a variety of settings.

**AOS Pre-Biosciences Analysis, weighted 0.5****562000**

Grade 10

Credit: 1

In this course the students first study the models used to make inferences about the distribution of means computed from samples. This study is followed by a continuing encounter with functions used to model dynamic processes. Special attention is given to discrete and continuous models for population dynamics, including an introduction to logistic models. The work with modeling includes tools used to model patterns in rates of change. This is the setting for an introduction to derivatives with some relevant applications. The course includes a unit on the design of experiments intended to identify relevant conditions causing specific effects.

**AOS Pre-Physical Sciences Analysis, weighted 0.5****562200**

Grade 10

Credit: 1

This course begins with the study of functions used to model the distribution of means computed from samples. Students are introduced to the design of switching circuits. The students continue their study of function as models for data with an emphasis on data collected from physical experiments. The analysis of motion in one and two dimensions is the setting for introducing derivatives as models for patterns in rates of change. Circular functions are introduced as models for processes exhibiting periodic behavior. The course includes a unit on the design of experiments intended to identify relevant conditions causing specific effects.

**AOS AB Calculus with Statistics****Advanced Placement**, *weighted 1.0*

Grades 11-12

**561100**

Credit: 1

This course covers all the topics in the College Board's description of an AB level AP Calculus course. In addition, the students experience use of one or more differential equations to create models for a variety of dynamic processes of the types studied in the physical and biological sciences. After the AP exam in May, the students are introduced to classical methods of statistical inference.

Students have the opportunity to take the AP AB Calculus Exam in May with the possibility of earning college credit.

**AOS BC Calculus with Statistics****Advanced Placement**, *weighted 1.0*

Grades 11-12

**571100**

Credit: 1

This course covers all of the topics in the College Board's description of a BC level AP Calculus course. In addition, the students experience use of one or more differential equations to create models for a variety of dynamic processes of the types studied in the physical and biological sciences. After the AP exam in May, the students are introduced to classical methods of statistical inference.

Students have the opportunity to take the AP BC Calculus Exam in May with the possibility of earning college credit.

**AOS Multivariable Calculus**, *weighted 0.5***583100****AOS Multivariable Calculus—****Dual Enrollment**, *weighted 0.5*

Grade 12

**583001**

Credit: 1

This course includes an introduction to vector calculus with special emphasis on the kinematics and dynamics models of motion in two and three dimensions. The course also includes techniques applied in physics to analyze in detail the modeling of the effect of force fields.

## MONROE TECHNOLOGY CENTER AND THE LOUDOUN GOVERNOR'S CAREER AND TECHNICAL STEM ACADEMY

**Administration of Justice I**, *weighted 0.5***NOVA 887000**

Grades: 11-12

Credits: 3

Prerequisite: Competitive Application Process

This two-year course is designed for juniors and seniors. The curriculum prepares students for entry-level employment in the law enforcement and criminal justice system as well as entrance into institutions of higher learning in the related fields of criminal justice, political science, and law. A dual enrollment agreement with Northern Virginia Community College allows qualifying students to earn 12 college credits.

Topics include, but are not limited to, criminal justice professions; law ethics; communication skills; interpreting criminal and civil laws; use of legal force; emergency response, traffic control, patrol functions, and procedures; criminal investigations; search and seizure; arrest and court procedures; the juvenile justice system; crime scene investigations; and crime prevention.

**Administration of Justice II**, *weighted 0.5***NOVA 887100**

Grade: 12

Credits: 3

Prerequisite: Administration of Justice I

This is a second-year course designed for seniors to prepare them for entry-level employment in the law enforcement and criminal justice system as well as entrance into institutions of higher learning in the related fields of criminal justice, political science, and law. The course explores career opportunities in the criminal justice community, understanding the constitutional rights of the accused and how these rights impact interviews and interrogations, preparing search and arrest warrants, the history of organized crime and criminal activities associated with those groups, international terrorism organizations and counter-terrorism strategies, advanced criminal investigation, and the use of investigative techniques to collect evidence, as well as advanced crime scene investigation.

**Advanced Networking/****Network Administration (CISCO)****895000**

Grades: 11-12

Credits: 3

Prerequisite: Competitive Application Process

Network Administration prepares students to enter employment and/or further education in the computer networking field. Students learn how to design, install, configure, operate, and trouble shoot simple and complex networks. Topics covered include network architecture, industry standards and communication protocols, network devices (such as routers, switches, and hubs), media selection, data transmission, and cabling.

Students in Network Administration should have strong reading comprehension as well as solid algebra skills. Cisco requires an 80% or higher on any written tests and 100% on practical tests. Students may obtain a copper and fiber optic certification through C-Tech. The C-Tech certification exam

requires an 85% to meet certification requirements. Students study basic standards and proper manufacturing techniques used in the field.

Network Administration uses the CISCO Certified Network Associate (CCNA) curriculum. This course prepares students to take two CISCO certification tests: CISCO test #ICND1 (CISCO Certified Entry Network Technician (CCENT) and the CISCO test ICND#2 (CCNA).

**Auto Collision Repair Technology I** **867000**  
 Grades: 11-12 Credits: 3  
 Prerequisite: Competitive Application Process

This two-year course provides basic knowledge and skills in the use of shop materials, equipment, tools, procedures, and manuals in the auto body and auto refinishing fields.

Basic welding, aligning, roughing out, and replacing and refinishing (painting) of auto body sheet metal, plastics, urethane, and composites are among the skills taught in this course. Fundamentals of auto body repair estimating are also taught.


Students gain experience through theory and hands-on shop projects.

**Auto Collision Repair Technology II** **868000**  
 Grade: 12 or Post-Graduate Credits: 3  
 Prerequisite: Collision Repair Technology I

Students have the opportunity to develop their knowledge and skills through applied theory and hands-on shop projects using knowledge learned in Collision Repair Technology I. Instructional topics include engine cooling systems, automotive circuits and wires, underbody measurement, and structural alignment.

Students explore career options such as auto collision repair technician, automotive refinishing technician, automotive parts specialist, detail technician, estimator, and insurance adjuster.


Upon successful completion of this course, students are prepared to perform many aspects of collision repair and qualify for sponsored apprenticeship programs.

**Auto Servicing Technology I, weighted 0.5**  **862000**  
 Grades: 11-12 Credits: 3  
 Prerequisite: Competitive Application Process

This two-year program provides the opportunity for students to develop the skills needed to follow environmental and safety practices and inspect, diagnose, adjust, and repair the systems of the modern technological automobile.

An industry standard curriculum, certified by the Automotive Service Excellence (ASE) and National Automotive Technician Educational Foundation (NATEF), provides the student the training format to proceed from the basic to advanced level technician in steering and suspension, electronics, and engine performance.


A dual enrollment agreement with Northern Virginia Community College allows qualifying students to earn up to 12 college credits. Extended lab times outside of the school day are sometimes required to meet prescribed competency attainment. This course is part of the Loudoun Governor's Career and Technical STEM Academy.

**Auto Servicing Technology II, weighted 0.5**  **863000**  
 Grade: 12 or Post-Graduate Credits: 3  
 Prerequisite: Auto Servicing Technology I

This program builds upon the skills learned in Auto Servicing Technology I. An industry standard curriculum, certified by ASE and NATEF, provides the student the training format to proceed from the basic to advanced level technician in brakes, engine repair, manual drive train and axles, automatic transmission and transaxles, and air conditioning.

*Note: Post-secondary students cannot receive Dual Enrollment Credit.*

A dual enrollment agreement with Northern Virginia Community College allows qualifying students to earn up to 14 college credits. This course is part of the Loudoun Governor's Career and Technical STEM Academy.

**Biotechnology**  **885200**  
 Grades: 11-12 Credit: 3  
 Prerequisite: Biology, Competitive Application Process

This one-year course introduces students to the world of biotechnology which is the use of living organisms or their products to modify human health and the human environment. Students explore many topics related to research, bioethics, forensics, health and medical fields, agriculture, environmental management, and many more. Students may study some topics related to their personal interests.

Through lab experiences in the greenhouse and off campus, students use a variety of laboratory equipment and become involved in research with the university and professional community through scientific inquiry and on-line mentorships. This Science, Technology, Engineering, and Technology (STEM) course is part of the Loudoun Governor's Career and Technical STEM Academy program.

**Building Construction I** **865000**  
 Grades: 11-12 Credits: 3  
 Prerequisite: Competitive Application Process

In the first year of this two-year course, students acquire basic understanding of residential construction and the carpentry trade in addition to developing the skills to implement their acquired knowledge. The program also provides instruction on plan reading and comprehension.

Units of instruction include the completion of an Occupational Safety and Health Administration (OSHA) certification program and the study of structural components with emphasis on how they relate to each other, code, and to the finished product. This includes foundation work, floor and wall framing, interior and exterior finishes, and the construction and installation of cabinetry.

Computer-generated design programs (Solid Builder) and "Green Construction" techniques are emphasized in order to prepare students for advanced technologies in the field and essential environmental considerations.

**Building Construction II****866000**

Grade: 12 or Post-Graduate

Credits: 3

Prerequisite: Building Construction I

Students expand their knowledge base with advanced skills, frequently working independently. They develop leadership skills by leading a crew of other students.

Students earn their OSHA 10 Card Certification and complete more in-depth work with areas of computer design and "Green Construction."

Upon successful completion of this program, students are prepared to perform many aspects of building construction and are eligible for sponsored apprenticeship programs. The graduating students receive professional accreditation from the National Center for Construction Education and Research (NCCER) for their course work.

**Computer &****Digital Animation I**, *weighted 0.5***NOVA** ★ **839003**

Grades: 11-12

Credits: 3

Prerequisite: Competitive Application Process

Computer & Digital Animation I is an introductory course in digital content creation and animation. Students produce computer-generated models, characters, and animations using high-end software. Students study the production pipeline from story idea to final render. The software used is 3ds Max for modeling and animation and Mudbox for 3d sculpting.

This course is part of the Loudoun Governor's Career and Technical STEM Academy. A dual enrollment agreement with Northern Virginia Community College allows eligible students to earn 9 college credits.

**Computer & Digital Animation II****839004**

Grade: 12 or Post-Graduate

Credits: 3

Prerequisite: Computer &amp; Digital Animation I

Computer & Digital Animation II is an intermediate course in digital content creation. It is a continuation of Computer & Digital Animation I. Students produce CG models, characters, and animations using primarily Maya and Motion Builder. Students create content suitable for TV, film, computer simulations, computer games, and architectural visualization.

**Computer Integrated Engineering & Design (CIED)/  
Introduction to Engineering**, *weighted 0.5***NOVA**  
**898000**

Grades: 11-12

Credits: 3

Prerequisite: Competitive Application Process

Level: Honors

CIED provides students with a foundation of skills needed for manufacturing and engineering in today's "high tech" workplace. The course focus is on hands-on, task-based activities where students learn and practice industrial and engineering skills.

Students follow a self-paced curriculum covering robotics, CADD/CAM, electrical systems, fluid systems, materials engineering, mechanical systems, quality assurance, computer control, solar photovoltaic installation, and wind turbine installation. Students are introduced to Solidworks, Mastercam and mill/lathe CNC programming. A solid understanding of basic algebraic operations is needed.

CIED gives students a jump start to pursue careers in engineering and engineering technology. Students who complete the course are prepared to take their skills to institutions of higher education or to related career fields.

This course is part of the Loudoun Governor's Career and Technical STEM Academy. A dual enrollment agreement with Northern Virginia Community College allows qualifying students to earn 9 college credits.

**Computer Systems Technology (CST)/****Information Technology Essentials (ITE)**, *weighted 0.5***NOVA****872000**

Grades: 11-12

Credits: 3

Prerequisite: Competitive Application Process

The CST/ITE program is a technical study of an array of topics offering fundamental knowledge regarding concepts, tools, and methods of Computer Systems Technology and Information Technology.

The curriculum concentrates on the student's acquisition of theory, principles, competencies, practices, methodologies, tools, and technologies associated with the computer science and information technology profession. Students learn to apply problem-solving skills, techniques, ethical judgment, and critical thinking to assess the impact of information technology on social, political, and economic issues. Each student gains a broad background across essential areas of the information technology industry through reading, studying, hands-on laboratory activities, E-books, virtual learning management systems, and industry collaboration.

Emphasis is placed on qualified students preparing for certifications and industry entry-level positions, and/or post-secondary studies in fields such as information security, information systems, telecommunications, and related information technology and computer science degrees. In addition to technical studies, students gain workplace readiness skills for effective written and oral communication with technical and non-technical language, as well as skills and strategies for facilitating group projects and team activities.

The course also explores an appreciation for the global impact of information technology (IT) on society and an understanding of the ethical and social responsibilities of IT professionals with emphasis on continued growth.

Students prepare for and take multiple professional industry-validated certifications, including the CompTIA A+ Certification. Certification requires passing two exams; CompTIA A+, CompTIA Network+, and Microsoft IT Academy certifications. Exam fees are paid by each student. In addition, this program is dual enrolled with Northern Virginia Community College. Students acquire college credit by meeting specific requirements.

**Cosmetology I****873000**

Grades: 11-12

Credits: 3

Prerequisite: Competitive Application Process

The first year of Cosmetology introduces students to the basics of shampooing and hairstyling, scalp treatments, hair cutting, finger waving, pin curling, roller techniques, chemical relaxing, permanent waving, hair coloring, facials, make-up, wig care, and manicuring. Related subjects include public health, personal hygiene, bacteriology, and salon management.



Regular attendance is essential for success in this course.

Students are required to purchase a cosmetology kit which includes items needed for the two-year program.

**In order to take the State Board of Cosmetology Licensing Examination, a student must successfully complete the program AND perform the required number of competencies in the lab AND present a U. S. Government-issued identification at the time of the Board exam. Passing the State Board Examination is required to be employed as a licensed cosmetologist.**

**Cosmetology II**

**874000**

Grade: 12 or Post-Graduate

Credits: 3

Prerequisite: Cosmetology I

Students are taught the advanced skills necessary to develop job entry requirements as a cosmetologist by performing the services expected in a professional salon environment. Advanced skills include hair cutting; permanent waving and chemical relaxing services; tinting, lightening, special effects hair color services and color removal application; hairstyling; thermal waving and pressing; artificial nail applications; and waxing services. Students also attain training in salesmanship, salon management and ownership, product knowledge, and public relations.

Human anatomy and physiology, chemistry and electricity, diseases and disorders of the scalp, skin, and nails are also covered.

Regular attendance is essential for completion of the required competencies needed for the State Board Exam. Students are expected to sit for the State Board Examination at the conclusion of Cosmetology II.

**In order to take the State Board of Cosmetology Licensing Examination, a student must successfully complete the program AND perform the required number of competencies in the lab AND present a U. S. Government-issued identification at the time of the Board exam. Passing the State Board Examination is required to be employed as a licensed cosmetologist.**

**Culinary Arts I**

**875000**

Grades: 11-12

Credits: 3

Prerequisite: Competitive Application Process

This two-year program is designed to prepare students for employment in the fast-growing culinary industry or to continue with post-secondary training in such areas as culinary arts, baking and pastry, or restaurant management. Students complete units in the history of hospitality, safety, sanitation, equipment use, recipe production, management, serving the guest, and professionalism. Commercial methods of food storage, preparation, and handling are practiced. Skills are developed in the preparation of appetizers, soups, salads, meats, fruits, vegetables, breads, garnishes, and desserts. Students participate in both on-site and off-site catering events and meal service.

Students have many opportunities to use their creativity as they design and prepare food for service and display. Participation in culinary and hospitality competitions on the local, state, and national level is encouraged. Students complete the ServSafe Food Safety Manager Training and Certification course and examination.

**Culinary Arts II**

**876000**

Grade: 12 or Post-Graduate

Credits: 3

Prerequisite: Culinary Arts I

Students learn production and service skills used in the culinary industry. Nutrition, management skills, marketing, sustainability, and exploration of ethnic cuisines are emphasized. Students develop menus, food orders, and production schedules to be used while preparing and serving luncheons and special catered events. Technology is utilized to conduct nutritional analysis, menu planning, costing, and inventory control. Visits to local food service establishments are arranged, giving students the opportunity to observe first-hand the talents, responsibilities, and expectations of chefs, cooks, bakers, hospitality employees, caterers, and entrepreneurs.

Students who successfully complete Culinary Arts I and II, a 400-hour paid mentorship program, and pass both the Level 1 and Level 2 ProStart exams will receive a ProStart certificate from the National Restaurant Association. The certification counts as a "student choice" verified credit towards graduation. Students can also earn advanced standing at NOVA, Johnson and Wales, The Art Institute, and many other culinary schools.

**Emergency Medical Technician**

**NOVA 861600**

**(EMT), weighted 0.5**

Credits: 3

Grades: 11-12

Prerequisites: Competitive Application Process and must be 16

years of age prior to the first day of class and be

affiliated with a volunteer fire or rescue department

in Loudoun County

The EMT program is designed to provide training to individuals in order to function independently in a medical emergency and serve as a vital link in the chain of the health care team. This course includes all skills necessary to provide emergency medical care as an attendant-in-charge with a basic life support ambulance service or other specialized rescue service.

**Environmental**

**NOVA ★ 885100**

**Plant Sciences, weighted 0.5**

Credits: 3

Grades: 11-12

Prerequisite: Competitive Application Process

This one-year course focuses on growing and designing with and maintaining plants which exist in landscaping, the natural environment, or indoors. Students cover methods of landscape design, conservation, and natural resource management. They learn information related to the study of plants and then apply that information in the greenhouse or the laboratory as well as learning retail skills through several large plant sales and floral arrangement opportunities. Each component of the course is designed to intrigue curiosity and then offer application for the new information and skills.

Topics covered include, but are not limited to, eco-friendly landscape design; plant physiology; reproduction, propagation, and production; urban forestry conservation and natural resource management; greenhouse management; turf management; and horticultural therapy.

This STEM course allows students to interact with professor or government and industry professionals. In addition, students are provided the opportunity to earn certifications through the Virginia

Nursery and Landscape Association, Virginia Flower Growers Association, and Virginia Department of Agriculture and Consumer Services through taking and passing these industry exams.

This is a Loudoun Governor's Career and Technical STEM Academy course. Eligible students who are dual-enrolled will earn 9 college credits along with 3 high school credits upon successful completion of this course.

### **Firefighter, weighted 0.5**

Grades: 11-12

**NOVA 859300**

Credits: 3

Prerequisites: Competitive Application Process, must be 16 years of age prior to the first day of class and be affiliated with a volunteer fire or rescue department in Loudoun County.

During this one-year course, students are taught the Virginia Department of Fire Programs curriculum. Emphasis is placed on moving the new firefighter ahead to be more prepared and assume more of a leadership role within a department.

Instruction includes the proper use of personal protective equipment, maneuvering through dark and small areas, use of ladders, use of hoses and nozzles, techniques and equipment for the extinguishment of fires, fire behavior, basic hazardous materials operation/mitigation, and ropes/knots.

A combination of classroom study, scenarios, and modular practical experiences prepares students to carry out most fire ground functions under the direct supervision of an officer or experienced firefighter. Students learn to make basic evaluations of safety problems and assume leadership roles in conducting interior attack and search operations.

### **Graphic Communications I**

Grades: 11-12

**879000**

Credits: 3

Prerequisite: Competitive Application Process

Students are introduced to all areas of graphic communications. This two-year program provides technical training in layout and design, desktop publishing, digital imaging, digital file preparation, digital and sublimation printing, as well as the offset printing process. Related information and economic factors of printing are included.

This program has received the highest national accreditation in the following five areas: Introduction to Graphic Communications, Advertising Design, Digital File Preparation, Offset Press Operations, and Bindery and Finishing.

### **Graphic Communications II**

Grade: 12 or Post-Graduate

**880000**

Credits: 3

Prerequisite: Graphic Communications I

The second year of Graphic Communications emphasizes advanced training using various pieces of equipment and software applications. Digital imaging, advanced work in desktop publishing, estimating costs, customer service, employment, and job seeking skills are covered. Students work on jobs with actual clients from concept to completion in a real-world graphic communication environment. A completed portfolio is a requirement of the second year.

Graphic Communications is a multi-faceted industry with a wide range of career options including designers, publishers, art directors,

web designers, packaging engineers, computer programmers, marketing specialists, writers, editors, and many more.

This program has received the highest national accreditation in the following five areas: Introduction to Graphic Communications, Advertising Design, Digital File Preparation, Offset Press Operations, and Bindery and Finishing.

### **Heating, Ventilation, & Air Conditioning I (HVAC)**

Grades: 11-12

**881000**

Credits: 3

Prerequisite: Competitive Application Process

This course provides basic knowledge and skills in residential and commercial air conditioning, refrigeration, and heating.

Instruction includes basic electricity, safety, the physics of the refrigeration process, soldering and silver brazing, electrical components and controls, wiring diagrams, basic plumbing, sheet metal fabrication, and duct installation.

### **Heating, Ventilation, & Air Conditioning II (HVAC)**

Grade: 12 or Post-Graduate

**882000**

Credits: 3

Prerequisite: HVAC I

Students are provided advanced skills in residential and commercial air conditioning, refrigeration, and heating. The students learn to install, maintain, and repair heating and cooling equipment. Instruction includes air distribution and ventilation systems; refrigeration equipment; oil, gas, electric and heat pump systems; residential plumbing; and electrical layout and installation.

Upon successful completion of this course, students are prepared to perform most aspects of HVAC and qualify for sponsored apprenticeship programs. Students may be eligible to take the Environmental Protection Agency (EPA) Certification Exam, the Universal R-410 A Certification Exam, any or all of the 12 HVAC Excellence Exams, and the National Construction Career Test (NCCT).

### **Introduction to Health**

**and Medical Sciences, weighted 0.5**

Grades: 10-12

**NOVA ★ 861000**

Credits: 3

Prerequisites: Competitive Application Process, Health Care Providers' Cardio-Pulmonary Resuscitation (CPR), Current Immunization Record, Current (within last 3 months) 2-step PPD test, and Medical Insurance (private or school-purchased)

This course introduces students to a vast array of careers within the health and medical professions. Students learn basic medical skills necessary to function safely and efficiently within the medical community. Career exploration allows students to make informed choices within related professions while preparing for future educational requirements.

Students are exposed to medical terminology; pharmacology; anatomy and physiology; and therapeutic and diagnostic interventions. Instruction also emphasizes professionalism, legal/ethical issues, and communication skills.

Students rotate through various medical settings for observational opportunities, connecting classroom knowledge with real-life experiences.

**Medical Laboratory Technology I**

★ **861200**  
Credits: 3

Grades: 11-12

Prerequisite: Introduction to Health and Medical Sciences

This second-year curriculum is designed to prepare students to gain foundational knowledge and skills appropriate for a variety of medically related career paths in the field of medical laboratory technology. They are introduced to diagnostic and therapeutic laboratory procedures that support medical research and practice and investigate safety, quality assurance, and ethical concerns associated with the field of medical laboratory technology. Students have the opportunity to shadow in a professional setting as well as participate in organized field experiences. Students have the opportunity to receive dual enrolled college credits for specific units of study.

**Medical Laboratory Technology II**

★ **861700**  
Credits: 3

Grade: 12 or Post-Graduate

Prerequisite: Medical Laboratory Technology I

Students build on the foundational knowledge and skills obtained in Medical Laboratory Technology I. The student uses the basic principles necessary to perform competently in the areas of Hematology, Clinical Chemistry, Clinical Microbiology, Immunohematology, and Immunology/Serology. Competency includes performing the technique correctly, understanding the theory of the procedures, and the proper interpretation of results. Weekly laboratories stress actual student performance of the routine tests normally seen in the clinical setting.

**Masonry**

**898007**  
Credits: 3

Grades: 11-12

Prerequisite: Competitive Application Process

Masonry is a two-year program that familiarizes students with various materials, tools, equipment, and practices of the masonry trade. The program helps students develop the skills and technical knowledge to lay concrete, block, brick, and ceramic tile.

Students also study blueprint reading and do labor and material estimates for residential and commercial projects. Students obtain an OSHA-10 certificate.

**Advanced Masonry**

**898008**  
Credits: 3

Grade: 12 or Post-Graduate

Prerequisite: Masonry I

Students advance their skills with concrete, block, brick, and ceramic tile. They complete various projects such as chimneys, fireplaces, sidewalks, and arches. They also learn repair and renovation work.

Stone masonry is included and prepares students to design and repair stone walls, fireplaces, sidewalks, and entryways.

Upon successful completion of this course, students are prepared to perform all aspects of masonry and qualify for sponsored apprenticeship programs.

**Nail Design Technology**

**891000**  
Credits: 3

Grades: 11-12

Prerequisite: Competitive Application Process

This one-year program is available to seniors and juniors who wish to become licensed nail technicians.

Topics include health and safety issues, knowledge and chemistry of products, hand and foot anatomy, nail structure, diseases of the hands and feet, and career opportunities.

Students learn basic and advanced skills in manicuring, pedicuring, hand and foot massage, nail tips, sculptured nails, nail wraps, nail art, and gel procedures.

The curriculum also emphasizes salon management and ownership, marketing strategies, and job attainment competencies.

In order to take the State Board Licensing Examination for Nail Technicians, a student must successfully pass the program and complete a required number of nail performances in the lab.

Regular attendance is essential.

Students are expected to sit for the State Board Examination which is required in order to obtain employment in the field.

**Pharmacy Technology I**

★ **861300**  
Credits: 3

Grades: 11-12

Prerequisite: Introduction to Health and Medical Sciences

This second-year curriculum is designed to prepare students to become credentialed Pharmacy Technicians who will assist pharmacists in a professional retail, doctor's office, or hospital setting. Topics of study include technician duties; dosage forms; prescription containers and closures; generic substitution; information on prescription stock bottle labels; controlled substances; prescribers; receiving prescriptions, interpreting directions for use; calculations; patient interaction; federal privacy requirements; the dispensing process; alternate drug delivery systems; sterile product compounding. Students have the opportunity to shadow in a professional setting as well as participate in organized field experiences.

*Criteria for admission may be based on a pre-assessment for program placement. Upon initial acceptance the student must undergo or obtain specific immunizations, medical clearance, CPR certification, and a criminal background check for final acceptance into the program.*

**Pharmacy Technology II**

★ **862300**  
Credits: 3

Grade: 12 or Post-Graduate

Prerequisite: Pharmacy Technology I

This third year of the certificate program is designed to provide students with the basic skills and knowledge to begin work as a pharmacy technician. The coursework fulfills the requirements of the Board of Pharmacy and prepares students to take either the state examination or the national examination administered by the Pharmacy Technician Certification Board. Trained, experienced pharmacy technicians who can demonstrate the right skills and knowledge should be able to pursue many exciting and respected career options or post-secondary study in the pharmacy field. Emphasis is placed on clinical field experiences and/or coordinated work-experiences.

### Practical Nursing (PN) I/ Certified Nurse Aide (CNA)

★ 888000  
Credits: 3

Grades: 11-12

Prerequisites: Competitive Application Process, Introduction to Health and Medical Sciences, Algebra, Biology, Test for Essential Academic Skills (TEAS). Chemistry is highly recommended. A lab fee is associated with this course.

Licensed Practical Nursing I is the first year of a two-year practical nursing program that is accredited by the Virginia Board of Nursing. After successful completion of PN I the student may be admitted to PN II. After successful completion of both years the graduates are eligible to take the NCLEX-PN licensing exam and upon passing are able to work as a Licensed Practical Nurse (LPN). The PN I students are also eligible to take the Certified Nurse Aide exam after successful completion of PN I.

Class units include geriatric nursing, nursing skills, nutrition, growth and development, nursing fundamentals, administration of medication, and anatomy and physiology. There is also a required 40-hour clinical experience at a long term care facility.

Rising juniors and seniors and qualified adults who meet admission requirements are eligible to apply. It is a competitive application process. Criteria for admission include a satisfactory score on the TEAS, satisfactory attendance, three references, and high school grades or diploma. A high school GPA of at least 2.0 is required. All students must be able to provide their own transportation to clinical experiences. Upon initial acceptance, the student must undergo or obtain specific immunizations, medical clearance, CPR certification, and criminal background checks. Most requirements must be met by the first day of the school year for final placement in the program. The Virginia Board of Nursing requires a social security number to take the licensing exam to become a licensed practical nurse.

Applications to the school of Practical Nursing are accepted from January 1 to March 31 of each school year. Applicants must call the Practical Nursing secretary at 571-252-2082 after January 2 to schedule a TEAS test date. The fee for this test is due on the day of the test. The Nursing program application and more information is available on the Practical Nursing site, under "Programs" at [www.lcps.org/mtc](http://www.lcps.org/mtc).

### Practical Nursing II

★ 889000  
Credits: 3

Grade: 12 or Post-Graduate

Prerequisites: Practical Nursing (PN) I; a lab fee is associated with this course.

Practical Nursing II is the second year of a two-year practical nursing program that is accredited by the Virginia Board of Nursing. After successful completion of PN I the student may be admitted to PN II. After successful completion of both years the graduate is eligible to take the NCLEX-PN licensing exam and upon passing is able to work as a Licensed Practical Nurse (LPN). The LPN works in all healthcare settings under the direction of a medical doctor or a registered nurse. The job outlook for the LPN is strong and in demand. LPNs often continue their education to become a Registered Nurse (RN) or similar health care provider.

Class units taught are medical and surgical nursing, psychiatric nursing, obstetrical and neonatal nursing, pediatric nursing, advanced nursing skills, and professional issues. The students

have a rigorous schedule of 16 hours a week of classroom instruction and 16 hours a week of clinical experiences. During clinical time the students give direct patient care under the supervision of the clinical instructors. Clinical experiences are at a hospital and at doctors' offices. All students must provide their own transportation daily to all clinical sites and to the school. Background checks and medical clearance are required prior to the start of clinical rotations. More information is available on the Practical Nursing site, under "Programs" at [www.lcps.org/mtc](http://www.lcps.org/mtc).

### Radiology Technology I, weighted 0.5

NOVA ★ 861400

Grades: 11-12

Credits: 3

Prerequisite: Introduction to Health and Medical Sciences

The course informs students early in their study of what they can expect from a career in radiologic technology, requirements for certification, options for advancement, and what is required of them as allied healthcare workers. The student develops an understanding of the radiographer as a central member of the health care team and a valuable assistant to the radiologist.

This second-year curriculum is designed to prepare the student to understand the anatomy and physiology assessed in diagnostic images of the human body. The student develops an understanding of the safe use of radiation within the medical field. Additional topics of study include the history of the radiological profession, medical ethics, concepts of imaging, radiobiology, radiation protection, and the future of radiologic technology careers. Students may have the opportunity to shadow in professional settings.

Understanding of the material is developed through the use of lectures, group discussions, collaborative games and projects, coloring activities, review of actual radiographic examinations, and visits to imaging facilities.

### Radiology Technology II

★ 861500

Grade: 12 or Post-Graduate

Credits: 3

Prerequisite: Radiology Technology I

Radiology II is intended for post-graduate students who are continuing their studies to prepare for acceptance into a Joint Review Committee on Education in Radiologic Technology (JRCERT) accredited training program. This course content is developed through extensive independent study projects and regular forum meetings. The course content is delivered via the Loudoun Vision course management system. Students assist with radiology labs twice monthly. Finally, students are expected to engage in volunteer practices within a healthcare setting.

Students develop an understanding of the biological and technical factors involved in medical imaging. Emphasis is placed on the physics of medical imaging equipment and the effect of medical radiation on biologic tissue.

Students learn to apply radiation protection procedures for patients and medical imaging personnel. In addition, students expand their understanding of patient care within the radiology department to include assessment of vital signs, immobilization techniques for imaging, safe use of oxygen and pharmacologics during imaging procedures, use of sterile techniques, and evaluation of medical emergencies.



**Television Production I/Digital Moviemaking I** **893000**

Grades: 11-12

Credits: 3

Prerequisite: Competitive Application Process

Camera operation, news reporting, non-linear editing, scriptwriting, audio production techniques, production planning, the business of video production, studio and control room operation, basic marketing, and production techniques are all a part of the first year of Television Production/Digital Moviemaking. The program is designed to have students complete the full competencies listed by the Virginia Career and Technical Education standards and to prepare students to obtain jobs in the video production industry.

Students use a wide range of professional equipment and produce projects that are viewed by the public. Students receive hands-on training with computer effects, computer editing, professional camera equipment, and audio production. This two-year program works well for students planning to attend college and/or for those intending to begin careers immediately after high school. Entry-level jobs exist in this field for motivated individuals with strong high school/college academic skills and technical expertise.

**Television Production II/Digital Moviemaking II** **894000**

Grade: 12 or Post-Graduate

Credits: 3

Prerequisite: Television Production I

The second year offers students more advanced editing opportunities and more complex productions. Special productions are created in a team setting as well as individually. Much of the production is in real-world settings for clients who wish public viewing of completed projects. Students use a wide range of professional equipment and produce projects that are viewed by the public. Students receive hands-on training with advanced computer effects, advanced computer editing, professional camera equipment, and complex audio production.

Students are encouraged to begin the program as juniors; however, if qualified, they may complete the second year as post-graduates.

**Veterinary Science** **885400**

Grades: 11-12

Credits: 3

Prerequisite: Competitive Application Process

This one-year course orients the student to Veterinary Science, covering topics such as anatomy and physiology, terminology, safety and sanitation, parasitology, posology, animal nutrition, breeds, professional conduct, office management, and emerging technologies in animal agriculture. Students are involved in performing clinical exams, conducting laboratory and hospital procedures and handling animals coordinated with area veterinary clinics and hospitals. Students frequently travel to off-campus sites. Students are actively involved in the FFA.

Student visits include these sites: M.A.R.E. Center, Cornwall Medical Lab, and the Marion DuPont Equine Hospital.

**Welding I** **896000**

Grades: 11-12

Credits: 3

Prerequisite: Competitive Application Process

This two-year course consists of instruction in the set up and safe operation of Oxy-fuel Welding and Cutting, Plasma Arc cutting, Shielded Metal Arc and beginning GMAW welding processes. Students are trained in welding, cutting, and brazing.

Instructional topics include Shielded Metal Arc welding, plate in all position, pipe, and GMAW all position. Class activities provide instruction in art and ornamental welding, preparation for the American Welding Society (AWS) Test, and construction and repair of metal projects. AWS testing is at the student's expense.

**Welding II** **897000**

Grade: 12 or Post-Graduate

Credits: 3

Prerequisite: Welding I

Emphasis in this course is on Shielded Metal Arc Welding in the horizontal, in all position, and pipe. Students have the opportunity to practice for the AWS's Limited and Unlimited Welding Thickness Test. Welding certification options are available. Advanced work on the MIG and TIG processes is included.

Upon successful completion of this course, students are prepared to perform many aspects of welding and qualify for sponsored apprenticeship programs.

## INDEX OF COURSES

COURSE #	COURSE	CREDIT	GRADE	PREREQUISITES	PAGE
<b>ART</b>					
240000	Art I	1	9-12	none	16
241000	Art II	1	10-12	Art I	16
242000	Art III	1	11-12	Art II or Art I and 2 semester courses	16
243000	Art IV	1	12	Art III	16
249100	Studio Art—Advanced Placement	1	12	Art III	16
247700	Survey of Art and Architecture History I	0.5	9-12	none	16
248700	Survey of Art and Architecture History II	0.5	9-12	none	16
231700	Drawing and Painting	0.5	10-12	Art I	17
245700	Photography	0.5	10-12	Art I	17
245600	Photography	1	10-12	Art I	17
244700	Sculpture	0.5	10-12	Art I	17
<b>BUSINESS &amp; INFORMATION TECHNOLOGY</b>					
821000	Introduction to Business & Marketing	1	9-11	none	17
826000	Keyboarding	0.5	9-12	none	17
829700	Advanced Keyboarding	0.5	9-12	Keyboarding or Keyboard Proficiency	17
828001	Computer Information Systems	1	9-12	Keyboarding or Keyboard Proficiency	18
828002	Advanced Computer Information Systems	1	10-12	Computer Information Systems	18
839001	Desktop/Multimedia Presentations	1	10-12	Keyboarding or Keyboard Proficiency	18
839002	Advanced Desktop/Multimedia Presentations	1	11-12	Desktop/Multimedia Presentations	18
830000	Accounting	1	10-12	none	18
831000	Advanced Accounting	1	11-12	Accounting	18
820700	Leadership Development	0.5	9-12	none	18
820800	Leadership Development	1	9-12	none	18
835700	Business Law	0.5	10-12	none	18
836700	Business Management	0.5	10-12	none	18
<b>ENGLISH &amp; ENGLISH ELECTIVES</b>					
140300	English 9—Academic	1	9	English 8	19
140200	English 9—Honors	1	9	English 8	19
150300	English 10—Academic	1	10	English 9	19
150200	English 10—Honors	1	10	English 9	19
160300	English 11—Academic	1	11	English 10	19
160200	English 11—Honors	1	11	English 10	19
170300	English 12—Academic	1	12	English 11	19
160100	English Language & Composition—Advanced Placement	1	11-12	English 10	20
170100	English Literature & Composition—Advanced Placement	1	12	English 11	20
160700	Creative Writing	0.5	9-12	none	20
160702	Fundamentals of Writing	0.5	9-12	none	20
185700	Etymology	0.5	10-12	none	20
192000	21 <sup>st</sup> Century Literacy Strategies I	1	9-12	none	20
192700	21 <sup>st</sup> Century Literacy Strategies I	0.5	9-12	none	20
193000	21 <sup>st</sup> Century Literacy Strategies II	1	10-12	21 <sup>st</sup> Century Literacy Strategies I	21
193700	21 <sup>st</sup> Century Literacy Strategies II	0.5	10-12	21 <sup>st</sup> Century Literacy Strategies I	21
250000	Theater Arts I	1	9-12	none	21
251000	Theater Arts II	1	10-12	Drama I/Theater Arts I	21
252000	Theater Arts III	1	11-12	Drama II/Theater Arts II	21
253000	Theater Arts IV	1	12	Drama III/Theater Arts III	21
254000	Technical Theater I	1	9-12	none	21
255000	Technical Theater II	1	11-12	Technical Theater I	21
187000	Journalism	1	9-12	none	21
188000	Newspaper Journalism I	1	10-12	Journalism and/or Instructor's Approval	22
188002	Newspaper Journalism II	1	11-12	Newspaper Journalism I	22
188003	Newspaper Journalism III	1	12	Newspaper Journalism II	22
189001	Photojournalism I	1	10-12	Journalism and/or Instructor's Approval	22
189002	Photojournalism II	1	11-12	Photojournalism I	22
189003	Photojournalism III	1	12	Photojournalism II	22
194700	Public Speaking	0.5	10-12	none	22

COURSE #	COURSE	CREDIT	GRADE	PREREQUISITES	PAGE
<b>ENGLISH LANGUAGE LEARNERS</b>					
394010	English as a World Language I	1	9-12	ACCESS Testing and Placement by ELL Dept.	23
395010	English as a World Language II	1	9-12	placement test or ELL I	23
197010	Advanced Language Learners	1	9-12	placement test or ELL II	23
190011	ELL Reading I	1	9-12	none	23
190012	ELL Reading II	1	9-12	placement test or ELL Reading I	24
190013	ELL Reading III	1	9-12	placement test or ELL Reading II	24
588010	ELL Math	1	9-12	none	24
650310	ELL Science Concepts I	1	9-12	none	24
650410	ELL Science Concepts II	1	9-12	ELL Science Concepts I	24
770010	ELL Social Science Concepts I	1	9-12	none	24
770011	ELL Social Science Concepts II	1	9-12	placement test or ELL Soc. Sci. Concepts I	24
145010	ELL Writing in Content Areas	1	9-12	none	24
190015	ELL Advanced Writing in Content Areas	1	9-12	none	24
GW-190111	Gateway ELL Developmental Reading I	1	9-12	Ages 18-20	25
GW-190112	Gateway ELL Developmental Reading II	1	9-12	Ages 18-20	25
GW-190113	Gateway ELL Developmental Reading III	1	9-12	Ages 18-20	25
GW-145110	Gateway-ELL Writing in Content Areas	1	9-12	Ages 18-20	25
GW-190115	Gateway-ELL Advanced Writing in Content Areas	1	9-12	Ages 18-20	25
GW-588110	Gateway Fast Math	1	9-12	Ages 18-20	25
GW-770110	Gateway-ELL Social Science Concepts I	1	9-12	Ages 18-20	25
GW-770111	Gateway-ELL Social Science Concepts II	1	9-12	Ages 18-20	25
GW-685110	Gateway-ELL Science Concepts I	1	9-12	Ages 18-20	25
GW-685210	Gateway-ELL Science Concepts II	1	9-12	Ages 18-20	25
<b>FAMILY &amp; CONSUMER SCIENCES</b>					
841700	Choices	0.5	9-10	none	26
844001	Early Childhood Education I	1	10-12	none, Human Development recommended, TB Test	26
845002	Early Childhood Education II	1	11-12	Early Childhood Education I, TB Test	26
846700	Fashion Design & Merchandising	0.5	9-12	none	26
845700	Gourmet Foods	0.5	9-12	none	26
846000	Human Development	0.5	9-12	none	26
840700	Independent Living	0.5	9-12	none	26
847700	Introduction to Housing & Interior Design	0.5	9-12	none	27
820700	Leadership Development	0.5	9-12	none	27
820800	Leadership Development	1	9-12	none	27
842700	Marriage and Family Dynamics	0.5	11-12	none	27
844002	Teacher Cadet Program	1	12	3.0 GPA, application process, essay, teacher recommendation, TB test	27
<b>HEALTH &amp; PHYSICAL EDUCATION</b>					
440000	Health and Physical Education 9 (PE)	1	9	none	27
450000	Health and Physical Education 10	1	10	Health and PE 9	27
453000	Classroom Driver Education	0	10	Health and PE 9	27
460000	Advanced Physical Education I	1	11-12	Health and PE 10	28
460700	Advanced Physical Education I	0.5	11-12	Health and PE 10	28
465000	Advanced Physical Education II	1	11-12	Health and PE 10	28
465700	Advanced Physical Education II	0.5	11-12	Health and PE 10	28
<b>WORLD LANGUAGES AND CULTURES</b>					
380000	American Sign Language I	1	9-12	none	28
382000	American Sign Language II	1	10-12	American Sign Language I	28
383000	American Sign Language III	1	11-12	American Sign Language II	28
340000	French I	1	7-12	none	28
342000	French II	1	8-12	French I	28
343000	French III	1	9-12	French II	28
344000	French IV—Honors	1	10-12	French III	29
345000	French V—Honors	1	10-12	French IV—Honors	29
345100	French—Advanced Placement	1	10-12	French V—Honors	29
370000	German I	1	7-12	none	29
372000	German II	1	8-12	German I	29
373000	German III	1	9-12	German II	29
374000	German IV—Honors	1	10-12	German III	29
375000	German V—Honors	1	10-12	German IV—Honors	29
375100	German—Advanced Placement	1	10-12	German V—Honors	29
350000	Latin I	1	7-12	none	30
352000	Latin II	1	8-12	Latin I	30
353000	Latin III	1	9-12	Latin II	30

COURSE #	COURSE	CREDIT	GRADE	PREREQUISITES	PAGE
<b>WORLD LANGUAGES AND CULTURES, CONTINUED</b>					
354000	Latin IV—Honors	1	10-12	Latin III	30
355000	Latin V—Honors	1	10-12	Latin IV—Honors	30
359100	Latin—Advanced Placement	1	10-12	Latin V—Honors	30
321000	Mandarin Chinese I	1	9-12	none	30
331000	Mandarin Chinese II	1	10-12	Mandarin Chinese I	30
334000	Mandarin Chinese III	1	11-12	Mandarin Chinese II	30
367000	Spanish for Fluent Speakers I	1	7-12	placement test	31
367300	Spanish for Fluent Speakers II	1	7-12	Spanish for Fluent Speakers I/placement test	31
367500	Spanish for Fluent Speakers III—Honors	1	9-12	Spanish for Fluent Speakers II/placement test	31
360000	Spanish I	1	7-12	none	31
362000	Spanish II	1	8-12	Spanish I	31
363000	Spanish III	1	9-12	Spanish II	31
364000	Spanish IV—Honors	1	10-12	Spanish III	31
365000	Spanish V—Honors	1	10-12	Spanish IV—Honors, Spanish for Fluent Speakers III	31
365100	Spanish—Advanced Placement	1	10-12	Spanish V—Honors, Spanish for Fluent Speakers III	31
<b>MARKETING</b>					
821000	Introduction to Business & Marketing	1	9-11	none	32
822000	Marketing Co-Op	2	11-12	Screening Conference	32
822100	Marketing Non-Co-Op	1	11-12	Screening Conference	32
823000	Advanced Marketing Co-Op	2	12	Marketing Co-Op or Marketing Non-Co-Op	32
823100	Advanced Marketing Non-Co-Op	1	12	Marketing Co-Op or Marketing Non-Co-Op	32
821100	Sports, Entertainment, & Recreation Marketing	1	10-12	Introduction to Business & Marketing recommended	32
820700	Leadership Development	0.5	9-12	none	32
820800	Leadership Development	1	9-12	none	32
<b>MATHEMATICS</b>					
542000	Algebra I, Part 1	1	9-12	Mathematics 8	33
543000	Algebra I, Part 2 ( <i>Credited if completed with Part 1</i> )	1	9-12	Algebra I, Part 1	33
540000	Algebra I	1	9-12	Successful Completion of Grade 7 or Grade 8 Mathematics	34
550000	Geometry	1	9-12	Algebra I	34
565000	Functions, Algebra & Data Analysis	1	9-12	Algebra I	34
560000	Algebra II	1	9-12	Algebra I and Geometry	34
571000	Algebra II/Trigonometry	1	9-12	Algebra I and Geometry	34
597700	Statistics & Probability	0.5	10-12	Algebra II	34
599700	Discrete Mathematics	0.5	10-12	Algebra II	35
572000	Advanced Functions and Modeling	1	10-12	Algebra II	35
585000	Advanced Algebra/Precalculus	1	10-12	Algebra II	35
586000	Mathematical Analysis	1	10-12	Algebra II/Trigonometry or Advanced Algebra/Precalculus	35
593000	Computer Mathematics	1	10-12	Algebra II (Co-requisite)	35
595100	Computer Science A—Advanced Placement	1	11-12	Computer Mathematics	35
585100	Calculus AB—Advanced Placement	1	11-12	Mathematical Analysis or Advanced Algebra/Precalculus	36
586100	Calculus BC—Advanced Placement	1	11-12	Mathematical Analysis or Calculus AB—Advanced Placement	36
598100	Statistics—Advanced Placement	1	10-12	Algebra II	36
583002	Multivariable Calculus	1	11-12	Calculus BC—Advanced Placement	36
583000	Multivariable Calculus—Dual Enrollment	1	11-12	Calculus BC—Advanced Placement	36
<b>MUSIC</b>					
260000	Music Appreciation	1	9-12	none	37
262000	Music Theory/History	1	9-12	none	37
270000	Instrumental Methods	1	9-12	teacher recommendation/audition	37
272000	Performance Ensemble I	1	9-12	teacher recommendation/audition	37
274000	Performance Ensemble II	1	9-12	teacher recommendation/audition	37
275004	Beginning Orchestra	1	9-12	none	37
275003	Intermediate Orchestra	1	9-12	successful completion of LCPS middle school orchestra program, High School level Beginning Orchestra, or teacher recommendation	37
275002	Advanced Orchestra	1	9-12	successful completion of HS Intermediate level or teacher recommendation	37
275001	Artist Orchestra	1	9-12	successful completion of HS Advanced level or teacher recommendation	37
276000	Jazz Ensemble	1	9-12	teacher recommendation/audition	38
293000	Beginning Guitar	1	9-12	none	38
294000	Intermediate Guitar	1	9-12	Beginning Guitar, teacher recommendation or audition	38
295000	Advanced Guitar	1	9-12	Intermediate Guitar, teacher recommendation or audition	38



COURSE #	COURSE	CREDIT	GRADE	PREREQUISITES	PAGE
<b>MUSIC, CONTINUED</b>					
296000	Artist Level Guitar	1	9-12	successful completion of Advanced Guitar, audition and teacher recommendation	38
262100	Music Theory—Advanced Placement	1	9-12	successful completion of Music Theory/History (262000) and/or teacher recommendation	38
280000	Mixed Chorus	1	9-12	none	39
278000	Small Vocal Ensemble	1	9-12	audition	39
282000	Advanced Chorus	1	9-12	audition	39
284000	Men’s Chorus	1	9-12	audition	39
286000	Women’s Chorus	1	9-12	audition	39
<b>NAVAL JUNIOR RESERVE OFFICERS TRAINING CORPS (NJROTC)</b>					
848000	Naval Science I	1	9-12	none	39
849000	Naval Science II	1	10-12	Naval Science I	39
847000	Naval Science III	1	11-12	Naval Science I and II	39
845000	Naval Science IV	1	12	Naval Science I, II, and III	40
<b>SCIENCE</b>					
640200	Earth Science—Honors	1	9-10	none	40
640300	Earth Science—Academic	1	9-10	none	40
640500	Earth Science	1	9-10	none	40
650200	Biology—Honors	1	9-10	none	40
650300	Biology—Academic	1	10	none	41
650500	Biology	1	10	none	41
655100	Biology—Advanced Placement	1	10-12	Biology—Honors or Academic & Chemistry (completed or taken concurrently)	41
660000	Chemistry	1	10-12	Algebra I	41
665100	Chemistry—Advanced Placement	1	11-12	Chemistry	41
656000	Environmental Science	1	11-12	Two lab science credits	41
673000	Conceptual Physics	1	10-12	Algebra I. Passing score on Algebra I SOL Test.	41
670000	Physics	1	11-12	Algebra II	41
675100	Physics C—Advanced Placement	1	11-12	Physics; Co-requisite: Calculus	42
670201	Geospatial Science	1	12	none	42
670200	Geospatial Science—Dual Enrollment	1	12	none	42
680000	Independent Science Research	1	12	3 lab sciences	42
680100	Independent Science Research—Dual Enrollment	1	12	3 lab sciences	42
<b>SOCIAL SCIENCE AND GLOBAL STUDIES</b>					
740900	Pre-AP World History/Geography to 1500	1	9-10	none	43
740300	World History/Geography to 1500—Academic	1	9	none	43
740400	World History/Geography to 1500	1	9	none	43
751000	World History/Geography—Advanced Placement	1	10-12	World History/Geography I	43
745300	World History/Geography 1500 to present—Academic	1	10	none	43
745400	World History/Geography 1500 to present	1	10	none	43
750100	U.S. History—Advanced Placement	1	11	none	44
750300	U.S. & Virginia History—Academic	1	11	none	44
750400	U.S. & Virginia History	1	11	none	44
762000	Combination United States Government and Comparative Government—Advanced Placement	1	12	none	44
760300	U.S. & Virginia Government—Academic	1	12	none	45
760400	U.S. & Virginia Government	1	12	none	45
782700	Economics	0.5	10-12	none	45
741210	Survey of African History	1	11-12	none	45
741200	Survey of African History—Dual Enrollment	1	11-12	none	45
781100	Survey of Latin American History	1	11-12	none	45
781000	Survey of Latin American History—Dual Enrollment	1	11-12	none	45
782000	Economics, Micro and Macro—Advanced Placement	1	11-12	none	45
775000	Global Social Issues	0.5	11-12	none	46
741100	Human Geography—Advanced Placement	1	11-12	none	46
784700	Modern International Relations	0.5	11-12	none	46
786700	Psychology	0.5	11-12	none	46
787100	Psychology—Advanced Placement	1	11-12	none	46
741300	The World of Ideas	0.5	11-12	none	47
741400	World Religions	0.5	11-12	none	47

COURSE #	COURSE	CREDIT	GRADE	PREREQUISITES	PAGE
<b>SPECIAL EDUCATION</b>					
080040	Basic Skills	0.5-1	9-12	none	47
080570	Career Pathways	1	10-12	none	47
591070	Personal Living and Finance	1	9-12	Mathematics 8	47
101100	Reading Workshop Strategies (Also 101200, 101300, 101400)	1	9-12	none	47
<b>TECHNOLOGY EDUCATION</b>					
810000	Aerospace Science	1	10-12	none	48
851000	Technology Education I	1	9-12	none	48
852000	Technology Education II	1	10-12	Technology Education I	48
853000	Computer Aided Drafting & Design I	1	10-12	none	48
854000	Computer Aided Drafting & Design II	1	11-12	Computer Aided Drafting & Design I	48
856000	Applied Technology I	1	9-12	none	48
857000	Applied Technology II	1	10-12	Applied Technology I	48
858000	Applied Technology III	1	11-12	Applied Technology II	48
<b>OTHER</b>					
092000	AVID 1	1	9	none	49
093000	AVID 2	1	10	none; AVID 1 recommended	49
094000	AVID 3	1	11	AVID 2	49
095000	AVID 4	1	12	AVID 3	49
823V00	Economics and Personal Finance	1	10-12	none	49
825000	Personal Finance	0.5	10-12	none	49
071000	SAT Preparation	0.5	10-12	None	49
<b>LCPS ACADEMY OF SCIENCE COURSES</b>					
664900	AOS Integrated Science I	1	9	None	51
645900	AOS Integrated Science II	1	9	AOS Integrated Science I	51
654900	AOS Integrated Science III	1	10	AOS Integrated Science I & II	51
652900	AOS Biology	1	11	None	51
651900	AOS Sophomore Science Research	1	10	AOS Integrated Science I & II	51
661900	AOS Junior Science Research	1	11	None	51
671900	AOS Senior Science Research	1	12	None	51
664100	AOS Biology—Advanced Placement	1	11-12	None	52
674100	AOS Environmental Science—Advanced Placement	1	12	None	52
669100	AOS Chemistry—Advanced Placement	1	12	None	52
662100	AOS Physics—Advanced Placement	1	12	None	52
541300	AOS Analytic Geometry, Functions and Trigonometry with Transformations	1	9	None	52
562000	AOS Pre-Biosciences Analysis	1	10	None	52
562200	AOS Pre-Physical Sciences Analysis	1	10	None	52
561100	AOS AB Calculus with Statistics—Advanced Placement	1	11-12	None	53
571100	AOS BC Calculus with Statistics—Advanced Placement	1	11-12	None	53
583100	Multivariable Calculus	1	12	None	53
583001	Multivariable Calculus—Dual Enrollment	1	12	None	53

COURSE #	COURSE	CREDIT	GRADE	PREREQUISITES	PAGE
<b>MONROE TECHNOLOGY CENTER PROGRAMS</b>					
887000	Administration of Justice I	3	11-12	Competitive Application Process	53
887100	Administration of Justice II	3	12	Administration of Justice I	53
895000	Advanced Networking (CISCO Systems)	3	11-12	Competitive Application Process	53
867000	Auto Collision Repair Technology I	3	11-12	Competitive Application Process	54
868000	Auto Collision Repair Technology II	3	12	Collision Repair Technology I	54
862000	Auto Servicing Technology I	3	11-12	Competitive Application Process	54
863000	Auto Servicing Technology II	3	12	Auto Servicing Technology I	54
885200	Biotechnology	3	11-12	Biology, Competitive Application Process	54
865000	Building Construction I	3	11-12	Competitive Application Process	54
866000	Building Construction II	3	12	Building Construction I	55
839003	Computer & Digital Animation I	3	11-12	Competitive Application Process	55
839004	Computer & Digital Animation II	3	12	Computer & Digital Animation I	55
898000	Computer Integrated Engineering & Design (CIED)/ Introduction to Engineering	3	11-12	Competitive Application Process	55
872000	Computer Systems Technology/ Information Technology Essentials	3	11-12	Competitive Application Process	55
873000	Cosmetology I	3	11-12	Competitive Application Process	55
874000	Cosmetology II	3	12	Cosmetology I	56
875000	Culinary Arts I	3	11-12	Competitive Application Process	56
876000	Culinary Arts II	3	12	Culinary Arts I	56
861600	Emergency Medical Technician (EMT)	3	11-12	Competitive Application Process, 16 years old prior to first day of class, affiliated with volunteer fire or rescue department in Loudoun County	56
885100	Environmental Plant Sciences	3	11-12	Competitive Application Process	56
859300	Firefighter	3	11-12	Competitive Application Process, 16 years old prior to first day of class, affiliated with volunteer fire or rescue department in Loudoun County	57
879000	Graphic Communications I	3	11-12	Competitive Application Process	57
880000	Graphic Communications II	3	12	Graphic Communications I	57
881000	Heating, Ventilation, & Air Conditioning I (HVAC)	3	11-12	Competitive Application Process	57
882000	Heating, Ventilation, & Air Conditioning II (HVAC)	3	12	Heating, Ventilation, & Air Conditioning I	57
861000	Introduction to Health and Medical Sciences	3	10-12	Competitive Application Process, Health Care Providers' (CPR), Current Immunization Record, Current 2-step PPD test, Medical Insurance	57
861200	Medical Laboratory Technology I	3	11-12	Introduction to Health and Medical Sciences	58
861700	Medical Laboratory Technology II	3	12	Medical Laboratory Technology I	58
898007	Masonry	3	11-12	Competitive Application Process	58
898008	Advanced Masonry	3	12	Masonry I	58
891000	Nail Design Technology	3	11-12	Competitive Application Process	58
861300	Pharmacy Technology I	3	11-12	Introduction to Health and Medical Sciences	58
862300	Pharmacy Technology II	3	12	Pharmacy Technology I	58
888000	Practical Nursing (PN) I	3	11-12	Competitive Application Process, Introduction to Health and Medical Sciences, Algebra, Biology, Test for Essential Academic Skills (TEAS). Chemistry highly recommended. Lab fee.	59
889000	Practical Nursing II	3	12	Practical Nursing (PN) I	59
861400	Radiology Technology I	3	11-12	Introduction to Health and Medical Sciences	59
861500	Radiology Technology II	3	12	Radiology Technology I	59
893000	Television Production I/Digital Moviemaking I	3	11-12	Competitive Application Process	60
894000	Television Production II/Digital Moviemaking II	3	12	Television Production I	60
885400	Veterinary Science	3	11-12	Competitive Application Process	60
896000	Welding I	3	11-12	Competitive Application Process	60
897000	Welding II	3	12	Welding I	60

**Loudoun County Public Schools**

*21000 Education Court ■ Ashburn, Virginia 20148*