HANOVER COUNTY PUBLIC SCHOOLS

PROGRAM OF STUDIES

2018-2019

GRADES 6 - 12

Contents

Superintendent's Message

Dear Parents and Students,

The Program of Studies is an important tool for your use in planning a course of study for middle and high school. The booklet provides descriptions of courses and learning opportunities available to students as they prepare for further education and career planning.

When considering which options offer the best foundation for achieving personal goals, students and parents are encouraged to discuss plans with teachers, school counselors, high school career counselors, and other individuals knowledgeable about specific careers. Many resources are available to assist you in making informed decisions.

The mission statement of Hanover County Public Schools describes our district as student-centered and community-driven. I hope that you will find outlined in the Program of Studies educational opportunities of high quality which meet the needs of all students as they prepare to live and work in a dynamic and challenging era.

Thank you for your support of our school division and its mission.

Sincerely,

Michael B. Gill
Superintendent of Schools

El Mensaje del Superintendente

Queridos Padres y Estudiantes,

El Programa de Estudios es un instrumento importante para ustedes en planear un curso de estudio para la escuela media y la escuela secundaria. El folleto proporciona descripciones de los cursos y oportunidades de aprender para preparar a los estudiantes para una educación adicional y la planificación de la carrera.

Cuando consideran cuales opciones ofrecen el mejor fundamento para lograr sus metas personales, los estudiantes y los padres deben hablar de los planes con los profesores, los consejeros de orientación, los consejeros secundarios de carreras, y otros individuos eruditos sobre carreras específicas. Hay muchos recursos para ayudarles en hacer decisiones informadas.

El Communicado del Misión de las Escuelas Públicas de Hanover County describe nuestro distrito como centrado al estudiante y impulsado por la comunidad. Espero que encuentren en el Programa de Estudios oportunidades educativas de la calidad más alta que satisfacen las necesidades de todos los estudiantes mientras se preparan a vivir y trabajar en una época dinámica y estimulante.

Gracias por su apoyo de nuestra división escolar y su misión.

Sinceramente,

Michael B. Gill
Superintendente de las Escuelas

Planning for a Career and Education After High School

What does the future hold for me?

One of the most important questions asked by graduating seniors is "What am I going to do now that I'm leaving high school?" There are so many opportunities and unknowns. It is both frightening and exciting.

Many of the careers which will be necessary in the future have not yet been invented! Due to changing technology and increased global competition, all workers must be prepared to adapt and must be committed to life-long learning. Entry level jobs requiring only a high school diploma are disappearing. The minimum educational level required for most jobs by the time you graduate will be two years beyond high school. These may include two years of college toward a four-year baccalaureate degree, a two-year associate degree, apprenticeship training or specialty training.

In order to survive in the global, competitive job market, students must have a long-range educational and career plan. An increasing number of jobs will require a technical degree rather than a baccalaureate degree. These jobs will require a solid academic foundation in math, science and communications. Employers also will stress the importance of reasoning, teamwork, and interpersonal communications skills.

How can I prepare?

All high school graduates can expect to work, earn a living, and build a career. To do this successfully requires planning and selecting a career goal that is right for you. You need to set personal goals that will give focus to your high school years. These goals should be outlined in a career and educational plan developed with the assistance of a school counselor and your parents. Your career and educational plan provides a strategy for accomplishing goals. Consider the following as you develop your plan and select courses:

- Your abilities, interests, likes and dislikes;
- Curriculum in the career area of your choice, including work-related options;
- Cost, transportation and your extracurricular activities.

The 16 Career Clusters

Exciting and diverse careers are open to qualified applicants. The possibilities are limitless. Your school counselor and career counselor will help you to learn more about these opportunities and about your own interests using career inventories and computerized programs such as Virginia Wizard and Virginia View. Most careers fall into one of the following 16 Career Clusters:

Agriculture, Food & Natural Resources

The production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/ resources.

Architecture & Construction

Careers in designing, planning, managing, building, and maintaining the built environment.

Arts, A/V Technology & Communications

Designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.

Business Management & Administration

Business Management and Administration careers encompass planning, organizing, directing and evaluating business functions essential to efficient and productive business operations. Business Management and Administration career opportunities are available in every sector of the economy.

Education & Training

Planning, managing and providing education and training services, and related learning support services.

Finance

Planning, services for financial and investment planning, banking, insurance, and business financial management.

Government & Public Administration

Executing governmental functions to include governance; national security; foreign service; planning; revenue and taxation; regulation; and management and administration at the local, state, and federal levels.

Health Science

Planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

Hospitality & Tourism

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

Human Services

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

Information Technology

Building linkages in IT occupations framework: for entry level, technical, and professional careers related to the design, development, support and management of hardware, software, multimedia, and systems integration services.

Public Safety, Corrections & Security

Planning, managing, and providing legal, public safety, protective services and homeland security, including professional and technical support services.

Manufacturing

Planning, managing and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

Marketing, Sales & Service

Planning, managing, and performing marketing activities to reach organizational objectives.

Science Technology, Engineering & Mathematics

Planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services, and research and development services.

Transportation, Distribution & Logistics

Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water, and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

Courses in each Career Cluster are available in Hanover high schools. For specific information about these areas, see your school counselor. You may be referred to a specific teacher, parent, or business representative for more information.

You may wish to follow this link to the ***Program of Studies*** page on the division Web site:
http://hcps.us/pos/poshome.htm
or go to More Quick Links and select ***Program of Studies.*** This page contains documents including: ***Career and Technical Completer Sequences, Alignment of Hanover Career and Technical Programs with the 16 Career Clusters,*** and the ***Academic and Career Planning Guides*** from grades 9-10 and 11-12.

Your Program of Study: An Example

Use the blank template on page 6 or go to http://hcps2/pos/poshome.htm or More Quick Links on the Hanover County Public Schools home page and select ***Program of Studies.***

MIDDLE SCHOOL PROGRAM

GRADE 6	GRADE 7	GRADE 8
Language Arts	Language Arts	Language Arts
U.S. History I	U.S. History II	Civics and Economics
Mathematics	Mathematics	Mathematics
6th Grade Science	Life Science	Physical Science
Health/PE	Health/PE	Health/PE
Elective	Elective	Elective
Elective	Elective	Elective

In planning your high school program of study, select a full range of core academic courses and pursue a rigorous academic level of study. Thinking of high school courses in relation to the 16 Career Clusters described on page 4 can help you to focus on career planning and guide in the selection of courses and electives. Include carefully selected electives to support your plans for post-secondary education and to develop a career pathway. Your school counselors and high school career counselors will administer and help you to relate results of a variety of career interest and ability inventories with courses that can support your academic and career plans.

HIGH SCHOOL PROGRAM

GRADE 9	GRADE 10	GRADE 11	GRADE 12
English	English	English	English
World History I/MGS	World History II / Modern Global Studies	U.S. History	U.S. Government
Mathematics	Mathematics	Mathematics	Mathematics
Biology / Earth Science	Chemistry OR Physics OR other Science Elective	Chemistry OR Physics OR other Science Elective	Chemistry OR Physics OR other Science Elective
Health/PE	Health/PE	*Elective (or EPF)	*Elective (or EPF)
*Elective	Economics and Personal Finance (EPF)	*Elective	*Elective
Fine/Practical Arts Elective	*Elective	*Elective	*Elective
*Elective	*Elective	*Elective	*Elective

*Graduation Requirements include a specified number of electives for each type of diploma. Consult a school counselor to ensure a schedule that fulfills elective requirements for graduation. High school elective courses are available in a number of facilities including the four high schools, Hanover High School specialty center and The Hanover Center for Trades & Technology.

Individualized Education Plans for Special Education

All students with disabilities who are eligible for special education services participate in the secondary curriculum according to their Individualized Educational Plans (IEP). A variety of programs is provided to meet the students' individual needs including supportive and related services, resource assistance, collaborative classes, and separate classes. Resource classes offer training in study skills, social skills, organization skills, and other educational needs identified on the students' IEPs. Collaborative classes are co-taught by special and general educators in the general education setting while separate classes are taught by one instructor in a small group setting. Separate classes provide specialized instruction in the core academic areas.

Transition plans are developed as a part of the IEP for all students in special education beginning at the age of fourteen and focus on education, employment, and adult/community living. The purpose of the transition plan is to specify services such as career awareness, vocational evaluation, vocational training, work adjustment training, community based vocational education, adult agency linkages, or other services appropriate for the student to meet postsecondary goals.

Your Program of Study

NAME: _____ **DATE:** _____

YOUR DIPLOMA TYPE: _____

Agriculture, Food & Natural Resources	Education & Training	Hospitality & Tourism	Manufacturing
Architecture & Construction	Finance	Human Services	Marketing, Sales & Service
Arts, A/V Technology & Communications	Government & Public Administration	Information Technology	Science Technology, Engineering & Mathematics
Business Management & Administration	Health Science	Public Safety, Corrections & Security	Transportation, Distribution & Logistics

Middle School Program

GRADE 6	GRADE 7	GRADE 8

In planning your high school program of study, select a full range of core academic courses and pursue a rigorous academic level of study. Thinking of high school courses in relation to the 16 Career Clusters can help you to focus on career planning and guide in the selection of courses and electives. Include carefully selected electives to support your plans for post-secondary education and to develop a career pathway. Your school counselors and high school career counselors will administer and help you to relate results of a variety of career interest and ability inventories with courses that can support your academic and career plans.

High School Program

GRADE 9	GRADE 10	GRADE 11	GRADE 12

Graduation Requirements include a specified number of electives for each type of diploma. Consult a school counselor to ensure a schedule that fulfills elective requirements for graduation. High school elective courses are available in a number of facilities including the four high schools, Hanover High School specialty center and The Hanover Center for Trades & Technology.

Graduation Requirements

8 VAC 20-131-50: The requirements for a student to earn a diploma from a Virginia High School shall be those in effect when that student enters the ninth grade for the first time.

Students who complete Advanced Placement courses, college-level courses, or courses required for an International Baccalaureate Diploma shall be deemed to have completed the requirements for graduation under these standards provided they have earned the standard units of credit and earned verified units of credit in accordance with the Virginia diploma requirements outlined below.

DIPLOMA OPTIONS

Standard Diploma: Minimum Course & Credit Requirements

To graduate with a Standard Diploma, a student must earn at least 22 standard units of credit by passing required courses and electives, and earn at least six verified credits by passing end-of-course SOL tests or other assessments approved by the Board of Education.

Beginning with students entering ninth grade for the first time in 2013-2014, a student must also:

- Earn a board-approved career and technical education credential to graduate with a Standard Diploma; and
- Successfully complete one virtual course, which may be non-credit bearing.

The school counselor can advise on available courses to fulfill the requirements for a Standard Diploma.

Advanced Studies Diploma: Minimum Course & Credit Requirements

To graduate with an Advanced Studies Diploma, a student must earn 26 standard units of credit and at least nine verified units of credit:

- Students who entered ninth grade for the first time during and after 2011-2012 must earn at least 26 standard units of credit.
- Beginning with students entering ninth 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 an Advanced Studies Diploma.

Please note: Your school counselor can tell you which courses are offered by your school to fulfill the requirements for an Advanced Studies Diploma.

International Baccalaureate Diploma

Students who complete Advanced Placement, college-level, or courses required for an International Baccalaureate Diploma shall be deemed to have completed the requirements for graduation under these standards provided they have earned the standard units of credit and earned verified units of credit in accordance with the diploma requirements.

Standard Diploma

	STANDARD CREDITS*	VERIFIED CREDITS**
English	4	2
Mathematics	3	1
Laboratory Science	3	1
History and Social Sciences	3	1
Health and Physical Education	2	
World Language, Fine Arts or Career and Technical Education	2	
Economics and Personal Finance	1	
Electives	4	
Student Selected Test		1
Total	**22**	**6**

* Effective with first-time ninth graders in 2011-2012 and beyond
** Effective for first-time ninth graders in 2003-2004 and beyond

Standard Diploma *(proposed changes*)*

	STANDARD CREDITS	VERIFIED CREDITS
English	4	2
Mathematics	3	1
Laboratory Science	3	1
History and Social Sciences	3	1
Health and Physical Education	2	
World Language, Fine Arts or Career and Technical Education	2	
Economics and Personal Finance	1	
Electives	4	
Total	**22**	**5**

* Effective with first-time ninth graders in 2018-2019 and beyond

Advanced Studies Diploma

	STANDARD CREDITS*	VERIFIED CREDITS**
English	4	2
Mathematics	4	2
Laboratory Science	4	2
History and Social Sciences	4	2
World Languages	3	
Health and Physical Education	2	
Fine Arts or Career and Technical Education	1	
Economics and Personal Finance	1	
Electives	3	
Student Selected Test		1
Total	**26**	**9**

* Effective with first-time ninth graders in 2011-2012 and beyond
** Effective for first-time ninth graders in 2003-2004 and beyond

Advanced Studies Diploma *(proposed changes*)*

	STANDARD CREDITS	VERIFIED CREDITS
English	4	2
Mathematics	4	1
Laboratory Science	4	1
History and Social Sciences	4	1
World Languages	3	
Health and Physical Education	2	
Fine Arts or Career and Technical Education	1	
Economics and Personal Finance	1	
Electives	3	
Total	**26**	**5**

* Effective with first-time ninth graders in 2018-2019 and beyond

Requirements for a Special Diploma, Certificate of Program Completion and GED

In accordance with the requirements of the Standards of Quality, students with disabilities who complete the requirements of their Individualized Education Program (IEP) and do not meet the requirements for other diplomas shall be awarded the Special Diploma.

In accordance with the requirements of the Standards of Quality, students who complete prescribed programs of studies defined by the local school board but do not qualify for Standard, Advanced Studies, Special, or General Achievement diplomas shall be awarded Certificates of Program Completion. The requirements for Certificates of Program Completion are developed by local school boards in accordance with the Standards of Quality. Students receiving a general achievement diploma shall comply with 8VAC20-680-10, Regulations Governing the General Achievement Diploma.

In accordance with the provisions of the compulsory attendance law and 8VAC20-360-10, et. seq., Regulations Governing General Educational Development Certificates, students who do not qualify for diplomas may earn a high school equivalency credential.

Electives

Sequential Electives – Students who wish to receive a Standard Diploma must successfully complete two sequential electives.

- Sequential electives may be in any discipline as long as the courses are not specifically required for graduation.
- Courses used to satisfy the one unit of credit in a fine arts or career and technical education course may be used to partially satisfy this requirement.
- For career and technical education electives, check with your school counselor.
- An exploratory course followed by an introductory course may not be used to satisfy the requirement.
- An introductory course followed by another level of the same course of study may be used.
- Sequential electives do not have to be taken in consecutive years.

Fine Arts and Career and Technical Education – The Standard and Advanced Studies Diplomas each contain a requirement for one standard unit of credit in Fine Arts or Career and Technical Education. The Standards of Accreditation do not require that courses used to satisfy the requirement of Fine Arts or Career and Technical Education be approved by the Board. Therefore, local school officials should use their own judgment in determining which courses students take to satisfy this requirement.

Foreign Language – The Advanced Studies Diploma contains a requirement for either three years of one foreign language or two years of two languages.

Diploma Seals

According to the Regulations Establishing Standards for Accrediting Public Schools in Virginia, students who meet the requirements for graduation and who demonstrate academic excellence may be eligible for one or more of the following diploma seals:

The Governor's Seal shall be awarded to students who complete the requirements for an Advanced Studies Diploma with an average grade of "B" or better, and successfully complete college-level coursework that will earn the student at least nine transferable college credits in Advanced Placement (AP), International Baccalaureate (IB), or dual enrollment courses.

The Board of Education Seal shall be awarded to students who complete the requirements for a Standard Diploma or Advanced Studies Diploma with an average grade of "A."

The Board of Education's Career and Technical Education Seal shall be awarded to students who (i) earn a Standard Diploma or Advanced Studies Diploma and 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 (ii) pass an examination or an occupational competency assessment in a career and technical education concentration or specialization that confers a certification or occupational competency credential from a recognized industry, trade or professional association; or (iii) acquire a professional license in that career and technical education field from the Commonwealth of Virginia. The Board of Education shall approve all professional licenses and examinations used to satisfy these requirements.

The Board of Education's Seal of Advanced Mathematics and Technology shall be awarded to students who earn either a Standard Diploma or Advanced Studies Diploma and (i) satisfy all of the mathematics requirements for the Advanced Studies Diploma (four units of credit including Algebra II; two verified units of credit) with a "B" average or better; and (ii) either (a) pass an examination in a career and technical education field that confers certification from a recognized industry, trade or professional association; (b) acquire a professional license in a career and technical education field from the Commonwealth of Virginia; or (c) pass an examination approved by the Board that confers college-level credit in a technology or computer science area. The Board of Education shall approve all professional licenses and examinations used to satisfy these requirements.

The Board of Education's Seal for Excellence in Civics Education shall be awarded to students who earn either a Modified Standard, Standard or Advanced Studies Diploma and (i) complete Virginia and United States History and Virginia and United States Government courses with a grade of "B" or higher; (ii) have good attendance and no disciplinary infractions as determined by local school board policies; and (iii) complete 50 hours of voluntary participation in community service or extracurricular activities. Activities that would satisfy the requirements of clause (iii) of this subdivision include: (a) volunteering for a charitable or religious organization that provides services to the poor, sick or less fortunate; (b) participating in Boy Scouts, Girl Scouts, or similar youth organizations; (c) participating in JROTC; (d) participating in political campaigns or government internships, or Boys State, Girls State, or Model General Assembly; or (e) 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 this community service requirement.

The Board of Education's Seal of Biliteracy shall be awarded to students who earn a Board of Education approved diploma and: (i) pass all required End of Course Assessments in English reading and writing at the proficient or higher level; and (ii) are proficient at the intermediate mid level or higher in one or more languages other than English, as demonstrated through an assessment from a list to be approved by the Superintendent of Public Instruction. American Sign Language qualifies as a language other than English.

SOL Requirements: SOL Tests and Verified Units of Credit

Each Hanover County Public School student at grades 3 through 8 shall take the SOL assessment(s) for the student's respective grade, and the test results shall be part of a multiple set of criteria used to determine whether students in those grades proceed or are retained. In addition, each student in middle and secondary school shall take all applicable end-of-course SOL tests. Students who achieve a passing score on an end-of-course SOL test shall be awarded a verified unit of credit in that course. Students may earn verified credits in any courses for which end-of-course SOL tests are available. These courses include: Algebra I, Algebra II, Geometry, Biology, Chemistry, Earth Science (AP Environmental Science), World History I, World History II, Modern Global Studies, US and VA History, and English Reading and Writing (English 11). (6-4.4)

Limited English proficient students, as identified by a committee designated to make such determinations, may be exempted from the SOL tests for one grade level only in grades 3 through 8. Students with disabilities for whom participation in the SOL testing program is deemed inappropriate according to their IEP or 504 plan shall be expected to demonstrate proficiency on an alternative assessment

prescribed by the Virginia Board of Education in accordance with federal laws and regulations beginning with the school year 2000-2001.

Transfers

The Hanover County secondary schools shall accept credits for transfer students in accordance with regulations promulgated by the Virginia Board of Education and relevant School Board policies. (8 VAC 20-131-60)

Verified Credits

Beginning with the ninth-grade class of 2000-01 (graduation class of 2003-04), students receiving a Standard or Advanced Studies diploma shall have earned a required number of standard and verified credits as set forth in the Standards of Accreditation.

Weighted Credit Courses

NUMERICAL VALUES ASSIGNED TO GRADES
(For Students in the Graduating Classes of 2016, 2017, 2018 and 2019)

The following point system is used to compute class rank for each student in the graduating classes of 2016, 2017, 2018 and 2019:

1.0 Weighted Courses	A = 5.0 B = 4.0 C = 3.0 D = 2.0 F = 0
All Other Courses	A = 4.0 B = 3.0 C = 2.0 D = 1.0 F = 0

Students in Advanced Placement, Dual Enrollment, International Baccalaureate, and Advanced courses receive weighted credit. A numerical advantage of 1.0 is assigned when calculating students' grade(s) for these courses in accordance with the procedure for computing class rank.

NUMERICAL VALUES ASSIGNED TO GRADES
(For Students in the Graduating Classes of 2020 and thereafter)

The following point system is used to compute class rank for each student beginning with the graduating class of 2020:

1.0 Weighted Courses	A = 5.0 B = 4.0 C = 3.0 D = 2.0 F = 0
0.5 Weighted Courses	A = 4.5 B = 3.5 C = 2.5 D = 1.5 F = 0
All Other Courses	A = 4.0 B = 3.0 C = 2.0 D = 1.0 F = 0

Students in Advanced Placement, Dual Enrollment and International Baccalaureate courses receive weighted credit. A numerical advantage of 1.0 is assigned when calculating students' grade(s) for these courses in accordance with the procedure for computing class rank. Students in Advanced courses also receive weighted credit. A numerical advantage of 0.5 is assigned when calculating students' grade(s) for these courses in accordance with the procedure for computing class rank.

The Program of Studies and student schedules will clearly reflect which courses carry weighted credit. Appropriate school publications, including the Program of Studies, will state the criteria for placement in courses that carry weighted credit.

Accelerated Credit Option

Effective in the 2001-2002 school year, qualified students may choose the acceleration option of obtaining Carnegie credit(s) and verified credit(s) in designated courses without completing the requirement of 140 clock hours of instruction. Students and parents may request permission to qualify for accelerated credit in the following courses:

- Algebra I
- Algebra II
- Geometry
- Biology
- Chemistry
- Earth Science (AP Environmental Science)
- Modern Global Studies
- World History I
- World History II
- U.S. History
- English: Reading, Literature and Research
- English: Writing

The process of applying for accelerated credit is outlined below. Students must complete the application and return it to the principal to enter the process. Application forms are available in the counseling office. (Policy/Regulation 6-4.3)

ACTION	DEADLINE
Student and parent/guardian submit application to principal.	January 15 for SOL Writing & February 15 for other SOL courses
Principal sends all applications to Associate Director of Gifted Education.	January 25 for SOL Writing & February 25 for other SOL courses
Associate Director of Gifted Education notifies principal and lead teacher specialist of division-level testing schedule.	February 1 for SOL Writing & March 1 for other SOL courses
Principal notifies students of date/location of division-level testing.	February 5 for SOL Writing & April 1 for other SOL courses
Students demonstrate mastery of course content as required by division-level committee and receive a grade of "Pass" or "Fail."	February for SOL Writing & April for other SOL courses
Division-level committee sends principal written documentation of each student's "Pass" or "Fail" status on each assessment. • "Pass" grade will be recorded on student's academic transcript. • "Fail" grade will not be recorded on student's academic transcript nor will it affect student's GPA. • "Pass" grade is required for student to be eligible to take the SOL test for a given course and to receive a Carnegie credit for the course.	February 15 for SOL Writing & April 30 for other SOL courses
Principal notifies each student of "Pass/Fail" status on assessments necessary to receive Carnegie credit in the accelerated option.	February 20 for SOL Writing & May 1 for other SOL courses
Student who achieves "Pass" grade on required division-level assessment tasks for designated course(s) must take the Standards of Learning (SOL) end-of-course test in the course(s) to receive Carnegie unit and verified credit.	March for SOL Writing & May for other SOL courses
Principal reviews SOL test results and notifies student/parent and student's school counselor that the student achieved or did not achieve the Carnegie credit or verified credit.	By September 1

Middle School Courses Guide

Agriculture, Environmental Studies and Natural Resources

COURSE NO.	COURSE TITLE	GRADE LEVEL 6	7	8	YEAR	SEMESTER	Prerequisite Course No.	Page
EL04	Agriscience Exploration		•	•		•		14
EL07	Agriculture Mechanics and Plant Science			•	•			14

Art

COURSE NO.	COURSE TITLE	GRADE LEVEL 6	7	8	YEAR	SEMESTER	Prerequisite Course No.	Page
EL40	Art	•				•		16
EL15	Art Exploratory		•	•		•		15
EL33	Art With Computer		•	•		•		16
EL16	Art			•	•			15

English/Language Arts

COURSE NO.	COURSE TITLE	GRADE LEVEL 6	7	8	YEAR	SEMESTER	Prerequisite Course No.	Page
E100	Language Arts	•			•			14
EL29	Forensics	•				•		15
E105	Language Arts		•		•			14
E110	Language Arts			•	•			14
MC01	Reading/Writing Workshop (Level 1)	•				•		17
MC03	Reading/Writing Workshop (Level 2)		•			•		17
MC05	Reading/Writing Workshop (Level 3)			•		•		17
MC07	Reading/Writing Workshop (Level 1)	•			•			18
MC09	Reading/Writing Workshop (Level 2)		•		•			18
MC11	Reading/Writing Workshop (Level 3)			•	•			18

Exploratory

COURSE NO.	COURSE TITLE	GRADE LEVEL 6	7	8	YEAR	SEMESTER	Prerequisite Course No.	Page
EL01	Exploratory	•			•			14

Family and Consumer Sciences

COURSE NO.	COURSE TITLE	GRADE LEVEL 6	7	8	YEAR	SEMESTER	Prerequisite Course No.	Page
EL02	Teen Living		•	•		•		14
EL03	Life Management Skills			•	•			14

Gifted

Academically gifted students are encouraged to enroll in the most challenging courses available to them. Talented students in art and music are encouraged to enroll in elective courses in their talent area. Gifted Seminars are provided to extend and enrich the curriculum offerings. Student Goals and Outcomes, cluster grouping, and acceleration options help teachers provide appropriately differentiated instructional programs.

COURSE NO.	COURSE TITLE	GRADE LEVEL 6	7	8	YEAR	SEMESTER	Prerequisite Course No.	Page
EL08	Gifted Seminar	•			•			14
EL44	Gifted Seminar	•				•		16
EL09	Gifted Seminar		•	•		•		14
EL10	Gifted Seminar		•	•	•			14

Health and Physical Education

COURSE NO.	COURSE TITLE	GRADE LEVEL 6	7	8	YEAR	SEMESTER	Prerequisite Course No.	Page
P600	Health and Physical Education	•			•			18
P601	Health and Physical Education		•		•			18
P602	Health and Physical Education			•	•			18

History and Social Science

COURSE NO.	COURSE TITLE	GRADE LEVEL 6	7	8	YEAR	SEMESTER	Prerequisite Course No.	Page
H400	U. S. History I	•			•			16
H401	U. S. History II		•		•			17
H402	Civics and Economics			•	•			17

Information Technology and Communications

COURSE NO.	COURSE TITLE	GRADE LEVEL 6	7	8	YEAR	SEMESTER	Prerequisite Course No.	Page
EL33	Art With Computer		•	•		•		16
EL13	Keyboarding	•	•	•		•		15
EL14	Computer Applications	•	•	•		•		15
EL31	Computer Solutions		•	•		•	M208	15
EL32	Make It Your Business	•	•	•		•		16
EL05	Pre-Engineering 7 & 8		•	•		•		14
EL06	Pre-Engineering 8			•	•			14

Middle School Courses Guide, continued

Mathematics

COURSE NO.	COURSE TITLE	GRADE LEVEL 6	7	8	YEAR	SEMESTER	Prerequisite Course No.	Page
M200	Mathematics 6	•			•			17
M203	Mathematics 7	•	•		•		M200	17
MC02	Mathematics Workshop	•				•		17
MC04	Mathematics Workshop		•			•		17
MC06	Mathematics Workshop			•		•		17
MC08	Mathematics Workshop	•			•			17
MC10	Mathematics Workshop		•		•			17
MC12	Mathematics Workshop			•	•			17
M204	Mathematics 7/8	•	•		•		M200	17
M208	Mathematics 8		•	•	•		M203	17
M260	Algebra I		•	•	•		M208	17
M263	Geometry			•	•		M260	17

Performing Arts

COURSE NO.	COURSE TITLE	GRADE LEVEL 6	7	8	YEAR	SEMESTER	Prerequisite Course No.	Page
EL12	Theater Arts	•				•		15
EL17	Theater Arts		•	•		•		15
EL18	Theater Arts			•	•			15
EL20	Beginning Band	•	•	•	•			15
EL21	Band 2		•	•	•		EL20	15
EL22	Band 3		•	•	•		EL20	15
EL23	Beginning Chorus	•			•			15
EL24	Chorus 2		•	•	•		EL23	15
EL25	Chorus 3		•	•	•		EL23	15
EL26	Beginning Strings	•	•	•	•			15
EL28	String Ensemble		•	•	•		EL26	15

Science

The science courses offered at Hanover County Public Schools are designed to guide students toward scientific literacy. The scope of scientific knowledge is built from the elementary through the secondary level using a specific sequence of skills. Each grade level and/or course offers unique learning experiences in life science, physical science, earth science, and scientific investigation, reasoning and logic. By exploring concepts within the laboratory, with computers, or by using group investigation, students are able to develop critical thinking, reasoning, and problem-solving skills. Emphasis is placed on the skills necessary to examine alternative scientific explanations, actively conduct controlled experiments within laboratory safety guidelines, analyze and communicate information, and acquire and use scientific literature. Students will be encouraged to share their ideas, use the language of science, and discuss problem-solving techniques. Students in the seventh and eighth grade middle school sciences will be encouraged to submit their research projects to the Metro Richmond Science Fair and/or the Virginia Junior Academy of Science (VJAS).

COURSE NO.	COURSE TITLE	GRADE LEVEL 6	7	8	YEAR	SEMESTER	Prerequisite Course No.	Page
S302	Science	•			•			18
S301	Life Science		•		•			18
S305	Environmental Science	•	•	•		•		18
S303	Physical Science			•	•			18
EL45	Applied STEM Investigations	•	•	•		•		16

World Languages *

Availability of any world language class is dependent upon sufficient enrollment and the necessary staffing. Students may choose to begin language courses in middle school or high school. All classes cover curriculum over a full academic year, and upon successful completion of a course, the student receives a Carnegie unit of credit. Students in world language classes take common division-wide quarterly assessments.

COURSE NO.	COURSE TITLE	GRADE LEVEL			YEAR	SEMESTER	CREDIT	Prerequisite Course No.	Page
		6	7	8					
F570	Latin I	•	•	•	•		1		16
F571	Latin II		•	•	•		1	F570	16
F572	Latin III			•	•		1	F571	16
F590	Spanish I	•	•	•	•		1		16
F591	Spanish II		•	•	•		1	F590	16
F592	Spanish III			•	•		1	F591	16
F550	French I	•	•	•	•		1		16
F551	French II		•	•	•		1	F550	16
F552	French III			•	•		1	F551	16
F560	German I	•	•	•	•		1		16
F561	German II		•	•	•		1	F560	16
F562	German III			•	•		1	F561	16

**Students interested in pursuing the International Baccalaureatee degree program in high school must enroll in Level I of a language no later than 7th grade.*

Middle School Course Descriptions

E100 Language Arts
Grade 6 - Year
Students will actively engage in literary discussion and oral presentations. Students will read independently and develop vocabulary, comprehension, and literary skills. In addition, they will use the writing process, concentrating on composing, written expression, and usage/mechanics. Students will continue the study of media literacy introduced in earlier grades and use technology as a tool for research.

E105 Language Arts
Grade 7 - Year
This course is designed to strengthen and improve vocabulary, spelling, grammar, writing, reading, and oral communication skills. Students will continue to enhance their independent reading skills by developing more advanced vocabulary, additional comprehension skills, and literary skills. In addition, they will concentrate on the areas of composing, written expression, and usage/mechanics in developing narrative, expository and persuasive writings. Students will study media message techniques and apply research techniques to gather, organize and communicate information.

E110 Language Arts
Grade 8 - Year
Students will learn to apply knowledge of the characteristics and elements of literary forms. They will apply knowledge of word origins, analogies, metaphors, and similes to extend their vocabulary development. In addition, students will write in a variety of formats with an emphasis on persuasive writing, continuing to concentrate on the areas of composing, written expression, and usage/mechanics. Analyzing mass media messages and using interviewing techniques to gain information are additional areas of study.

EL01 Exploratory
Grade 6 - Year
A combination of "courses" listed below may be offered based on enrollment in a rotational sequence at each middle school as part of the exploratory program:

Newspaper Exploratory Class. Students will study the production of a newspaper, and they will distinguish hard news stories from feature articles and editorials. By regularly reading and discussing newspaper articles, students will be able to identify effective strategies and issues regarding the reporting of the news. Students will then create, publish, and market their own school newspaper.

Cultural Studies. Students will be actively involved in exploring cultures other than their own through language, food, the arts and other cultural aspects.

Living Skills. Students will learn to become more responsible and independent citizens, will explore ways to look and act their best, and will complete a hand sewing project. Snack foods for good health, safety, and home responsibilities will also be introduced.

Study Skills. This course is designed to help the student become a more independent learner and to develop effective study skills. Students will learn improved organizational and time management skills, increased orientation to available resources, school facilities, procedures, problem-solving, and communication skills to include listening and following directions.

Technology Education. Using modeling and simulations, students will experience and apply selected basic elements of technology. Techniques of problem solving will be introduced.

Agriculture. The use and principles of simple machines and tools will be taught through hands-on activities. Students will be introduced to plant science and horticulture concepts.

Career Exploration. Students will have opportunities to learn about career clusters through a variety of instructional resources including guest speakers and field trips.

EL02 Teen Living
Grades 7 and 8 - Semester
This semester course is designed to give students some practical experience in food preparation and management, clothing management, child care, and personal grooming. One emphasis of this course is wise decision-making.
NOTE: Students should pair this course with another middle school semester course.

EL03 Life Management Skills
Grade 8 - Year
Students will learn the fundamentals of clothing management and the development of good personal grooming habits. Units designed to develop skills in family living, food and nutrition, and child care are integral parts of this course. Students will use the kitchens and the sewing equipment.

EL04 Agriscience Exploration
Grades 7 and 8 - Semester
Basic mechanical skills and agricultural concepts are introduced. Students study the areas of welding, electricity, woodworking, forestry, plant and animal science. Hands-on activities are emphasized. *NOTE: Student should pair this course with another middle school semester course.*

EL05 Pre-Engineering 7 & 8
Grades 7 and 8 - Semester
Students combine resources and techniques to create systems, attaining comprehension of how technological and engineering systems work. Students will explore, design, redesign, analyze, and evaluate technological and engineering systems. By simulating systems and assessing their impacts, students gain insight into how to approach the problems and opportunities of a technological and engineering world. Students apply the engineering design process through participation in hands-on engineering projects. They also explore technology and engineering careers. *NOTE: Students should pair this course with another middle school semester course.*

EL06 Pre-Engineering 8
Grade 8 - Year
Students combine resources and techniques to create systems, attaining comprehension of how technological and engineering systems work. Students will explore, design, redesign, analyze, and evaluate technological and engineering systems. By simulating systems and assessing their impacts, students gain insight into how to approach the problems and opportunities of a technological and engineering world. Students apply the engineering design process through participation in hands-on engineering projects. They also explore technology and engineering oriented careers.

EL07 Agriculture Mechanics and Plant Science
Grade 8 - Year
This course is designed for students interested in mechanical skills and practical plant science. Approximately half of the class time is spent in the mechanics laboratory. This course is recommended for students interested in high school agricultural programs.

EL08 Gifted Seminar
Grade 6 - Year
Students identified as gifted may participate in G/T Resource. The resource class utilizes high interest topics to focus on process skills such as creative problem solving, critical thinking, and research skills.

EL09 Gifted Seminar
Grades 7 and 8 - Semester
This course is open to students identified as gifted. The course is designed to help students develop learning skills in areas such as decision-making, organization, planning and research through high interest units. Units alternate from year to year.
NOTE: Students should pair the semester course (EL09) with another middle school semester course.

EL10 Gifted Seminar
Grades 7 and 8 - Year
This course is open to students identified as gifted. The course is designed to help

students develop learning skills in areas such as decision-making, organization, planning and research through high interest units. Units alternate from year to year.

EL12 Theater Arts
Grade 6 - Semester
In this beginning course of theater, students are introduced to an overview of drama. Basic acting and stage terms are incorporated through a series of activities and simple presentations. The student will identify responsibilities involved in a variety of dramatic presentations. In addition, the student will learn basic evaluative techniques of dramatic productions. *NOTE: Student should pair this course with another middle school semester course.*

EL13 Keyboarding
Grades 6, 7 and 8 - Semester
The basic keyboarding skills which one uses in personal life and work are emphasized in this course. Students will develop proper computer keyboarding skills by practicing keying on a computer keyboard and numeric keypad. Emphasis is on the development of proper keyboarding skills, building speed and accuracy. Students will explore the use of a variety of software including word processing. *NOTE: Students should pair this course with another middle school semester course.*

EL14 Computer Applications
Grades 6, 7 and 8 - Semester
Computer Applications is a semester course that includes word processing, data base applications, telecommunications, and publishing. Changes in computer technology will be studied and new software packages will be examined. Using Windows and other programs, students will develop skills in applying technology to word processing, spreadsheets, applications, data bases, graphic information, manuscripts, and reports. Students will also acquire an understanding of Microsoft Word, Power Point, and Microsoft Publishing.
NOTE: Students should pair this course with another middle school semester course.

EL15 Art Exploratory
Grades 7 and 8 - Semester
Exploratory art builds upon drawing skills and the usage of the elements and principles of design. The students will explore related arts, art appreciation, and three-dimensional art forms. *NOTE: Students should pair this course with another middle school semester course.*

EL16 Art
Grade 8 - Year
Students who are highly motivated are eligible to take a full year of art at the eighth grade level. Skills in use of various media, two and three-dimensional design, color theory, ceramic design, textile design, and printing will be stressed. Students will explore the life and styles of various artists and how their work relates to specific units of study.

EL17 Theater Arts
Grades 7 and 8 - Semester
In this beginning course of theater, students are introduced to an overview of drama. Basic acting and stage terms are incorporated through a series of activities and simple presentations. The student will identify responsibilities involved in a variety of dramatic presentations. In addition, the student will learn basic evaluative techniques of dramatic productions. *NOTE: Student should pair this course with another middle school semester course.*

EL18 Theater Arts
Grade 8 - Year
Students who are highly motivated are eligible to take a full year of Theater Arts at the eighth grade level. This course emphasizes the development of acting skills, play analysis, play production, historical and social impact of theater as an art form, and theater as a profession. This course will provide a natural progression into further studies in drama at the high school level.

EL20 Beginning Band
Grades 6, 7 and 8 - Year
Students must furnish instrument although limited school owned instruments are available. This class is for students who wish to learn to play a band instrument. No experience is necessary for the class. Students will receive assistance from the instructor in order to make an appropriate choice of instruments. The emphasis of the class will be on skill development. Students must acquire a band instrument after approval by the teacher.

EL21 Band 2
Grades 7 and 8 - Year
Prerequisite: Beginning Band
Students must furnish instrument although limited school owned instruments are available. Emphasis will be placed on musical notation, sight reading, interpretation, extended range, and continued technical skill development. This is a class designed to emphasize ensemble playing. Some public performances are scheduled throughout the year.

EL22 Band 3
Grades 7 and 8 - Year
Prerequisite: Beginning Band
Students must furnish instrument although limited school owned instruments are available. Emphasis is on advanced technique and music reading skills throughout performance in a large ensemble. Public performances are scheduled throughout the year.

EL23 Beginning Chorus
Grade 6 - Year
This course is offered to any student who is interested in choral music. Proper vocal techniques and fundamentals of reading music will be taught.

EL24 Chorus 2
Grades 7 and 8 - Year
Prerequisite: Beginning Chorus
Emphasis will be placed on fundamentals of vocal technique, music notation, sight singing, and ensemble singing. Students will study a variety of musical styles. Public performances are scheduled throughout the year.

EL25 Chorus 3
Grades 7 and 8 - Year
Prerequisite: Beginning Chorus
Emphasis will be placed on vocal technique, music notation, sight singing, and ensemble singing. Students will study a variety of musical styles. Public performances are scheduled throughout the year. One section of this course will emphasize mixed voice singing. The other section/sectors will emphasize two or three part singing.

EL26 Beginning Strings
Grade 6 - Year
This class is for students who wish to learn to play a stringed instrument. No experience is necessary for the class. Students will receive assistance from the instructor in order to make an appropriate choice of instruments. The emphasis of the class will be on skill development. Students must acquire a string instrument after approval by the teacher. Students must furnish instrument although school-owned instruments are available.

EL28 String Ensemble
Grades 7 and 8 - Year
Prerequisite: Beginning Strings
Students must furnish instrument although limited school owned instruments are available. This class is available to students who have had prior string experience on the violin, viola, cello, or string bass. The emphasis is on basic fundamentals of music and advanced string techniques. Several public appearances will be scheduled throughout the school year.

EL29 Forensics
Grade 6 - Semester
Students learn and practice basic techniques of formal speaking. Informal competitions in speech-making are included and are designed to build student confidence. Previous experience is not required. *NOTE: Students should pair this course with another middle school semester course.*

EL31 Computer Solutions
Grades 7 and 8 - Semester
Prerequisites: Mathematics 8 or concurrent enrollment in Mathematics 8
This course provides students opportunities to pursue the logic, concepts, instruction, and sequence that formulate basic computer language. Students will be creating computer programs. Some specific topics include: input and output of data, assignment to variable and mathematical operations, screen formatting, looping, high resolution graphics and modular programming, and subroutines.

NOTE: Students should pair this course with another middle school semester course.

EL32 Make It Your Business
Grades 6, 7 and 8 - Semester
Students design, establish, and operate a small-group or class business, producing a service or product that meets an identified school or community need. Emphasis is placed on the introduction and application of business terminology, basic entrepreneurship concepts, and fundamental business principles. Basic academic skills (mathematics, science, English, and history/social science) are integrated into this course. *NOTE: Students should pair this course with another middle school semester course.*

EL33 Art With Computer
Grades 7 and 8 - Semester
Throughout this course students will develop creative solutions to visual art problems both on the computer and with traditional art processes such as painting, drawing, and printmaking. Concepts emphasized over the semester include the production of expressive images, an expanding knowledge of the elements and principles of design, and learning appropriate computer applications. *NOTE: Students should pair this course with another middle school semester course.*

EL40 Art
Grade 6 - Semester
The class emphasizes the use of design elements to communicate and express individual feelings and ideas. The students explore the role of art in world cultures and contemporary life. *NOTE: Students should pair this course with another middle school semester course.*

EL44 Gifted Seminar
Grade 6 - Semester
Students identified as gifted may participate in G/T Resource. The resource class utilizes high interest topics to focus on process skills such as creative problem solving, critical thinking, and research skills. *NOTE: Student should pair the semester course with another middle school semester course.*

EL45 Applied STEM Investigations
Grades 6, 7 and 8 - Semester
$5 Course Fee
Calling all innovators! Are you a good problem solver? Are you a team player? Do you like designing, developing, and creating solutions? The goal of the Applied STEM Investigations class is to foster a learning environment in which students are challenged to produce original ideas, objects and structures using concepts and skills from math, science and technology. Students will actively engage in critical thinking, technology, engineering, and mathematics. The focus will be on STEM topics relevant to Virginia, investigating careers, researching current topics, and explore engineering solutions. *NOTE: Students should pair this course with another middle school semester course.*

F550 French I
Grades 6, 7 and 8 - Year - 1 Credit
This is the introductory course to the French language and culture. Primary emphasis is given to the development of basic skills in listening and speaking. Students are given reading, speaking, and writing practice in controlled situations.

F551 French II
Grades 7 and 8 - Year - 1 Credit
Prerequisite: Successful completion of French I
This course continues to build on the skills that students developed in French I. More emphasis is given to reading and writing than in the first year. The study of grammar is expanded, and more communication in French is encouraged in the classroom.

F552 French III
Grade 8 - Year - 1 Credit
Prerequisite: Successful completion of French II
Students continue to refine the skills learned in the first two years. More complex aspects of grammar and syntax are introduced. Discussions of supplementary materials encourage use of the language. Increased emphasis will be placed on oral communication skills. French is used exclusively by the end of the year.

F560 German I
Grades 6, 7 and 8 - Year - 1 Credit
This is an introductory course into the German language and culture. Emphasis is given to development of basic skills in listening and speaking. Students are given reading, speaking, and writing practice in controlled situations.

F561 German II
Grades 7 and 8 - Year - 1 Credit
Prerequisite: Successful completion of German I
This course continues to build on the skills that students developed in German I. More emphasis is given to reading and writing than in the first year. The study of grammar is expanded, and increased communication in German is encouraged in the classroom.

F562 German III
Grade 8 - Year - 1 Credit
Prerequisite: Successful completion of German II
Students continue to refine the skills learned in the first two years. More complex aspects of grammar and syntax are introduced. Discussions of supplementary materials facilitate use of the language. Increased emphasis is placed on oral communication skills. German is used exclusively by the end of the year.

F570 Latin I
Grades 6, 7 and 8 - Year - 1 Credit
This is an introductory course into the Latin language. Primary emphasis is given to grammar, vocabulary, derivative study, reading, culture, and mythology. The overall objectives address the development of a working knowledge of the language and an appreciation for Roman culture upon the modern world. The legendary history and monarchy of Rome are historical periods studied at this level.

F571 Latin II
Grades 7 and 8 - Year - 1 Credit
Prerequisite: Successful completion of Latin I
This course continues to build on the skills that students developed in Latin I. More emphasis is given to reading and comprehension of the written language than in the first year. The study of grammar is expanded, and Republican history is covered.

F572 Latin III
Grade 8 - Year - 1 Credit
Prerequisite: Successful completion of Latin II
Students begin the course with an intensive review of grammar studied during the first two years. Most of the remaining grammatical, and syntactical topics are introduced throughout the year, as are vocabulary, derivative studies, and cultural topics associated with the readings used at this level. The period of the empire is emphasized as the study of Roman history continues.

F590 Spanish I
Grades 6, 7, and 8 - Year - 1 Credit
This is an introductory course into the Spanish language and culture. Primary emphasis is given to development of basic skills in listening and speaking. Students are given reading, speaking, and writing practice in controlled situations.

F591 Spanish II
Grades 7 and 8 - Year - 1 Credit
Prerequisite: Successful completion of Spanish I
This course continues to build on the skills that students developed in Spanish I. More emphasis is given to reading and writing than in the first year. The study of grammar is expanded, and increased communication in Spanish is required in the classroom.

F592 Spanish III
Grade 8 - Year - 1 Credit
Prerequisite: Successful completion of Spanish II
Students continue to refine the skills learned in the first two years. More complex aspects of grammar and syntax are introduced. Increased emphasis will be placed on oral and written communication skills. Spanish is predominantly used in class discussions, activities, daily participation, etc. throughout the year and used exclusively by the end of the year.

H400 U. S. History I
Grade 6 - Year
United States history from Pre-Columbian times to the end of the Civil War (1865). Through the context of history, concepts in civics, economics, and geography are continued. Students strengthen their skills in using maps and globes, interpreting and using information, and historical thinking.

H401 U.S. History II
Grade 7 - Year
United States history from the end of the Civil War (1865) through the present day. Through the context of history, concepts in civics, economics, and geography are continued. Students strengthen their skills in using maps and globes, interpreting and using information, and historical thinking.

H402 Civics and Economics
Grade 8 - Year
The role of the citizen in American society is the basis for this civics and economics course. Students will gain knowledge of national, state, and local government institutions, and the structure, principles, and operations of the American economy. Skills in data analysis and decision making are continued.

M200 Mathematics 6
Grade 6 - Year
Mathematics 6 is the first of three courses in middle school preparing students for the study of high school algebra, geometry, and statistics. Throughout the course, students focus on rational numbers and operations involving rational numbers. Students will use ratios to compare data sets; recognize decimals, fractions, and percents as ratios; solve singe-step and multistep problems; and gain a foundation in the understanding of and operations with integers. Students will solve problems involving area and perimeter, and begin to graph in a coordinate plane. In addition, students will build on the concept of graphical representation of data developed in the elementary grades and develop concepts regarding measures of center. Students will solve linear equations and inequalities in one variable, and use algebraic terminology. Students will represent proportional relationships using two variables as a precursor to the development of the concept of linear functions.

M203 Mathematics 7
Grades 6 and 7 - Year
Prerequisite: Mathematics 6
Mathematics 7 is the second of three courses in middle school preparing students for the study of high school algebra, geometry, and statistics. The seventh grade curriculum continues to emphasize the foundations of algebra. Students will build on the concept of ratios developed in grade 6 to solve problems involving proportional reasoning. Students will solve problems involving volume and surface area and focus on the relationships among the properties of quadrilaterals. Probability is investigated through comparing experimental results to theoretical expectations. Students continue to develop their understanding of solving linear equations and inequalities in one variable by applying the properties of real numbers. Students discern between proportional and non-proportional relationships and begin to develop a concept of slope as rate of change.

M204 Mathematics 7/8
Grades 6 and 7 - Year
Prerequisite: Mathematics 6
Mathematics 7/8 is a rigorous course that contains all of the content from both Mathematics 7 and Mathematics 8 in one school year. The course moves at a fast pace to cover all of the material required. At the conclusion of the course, students will take the Mathematics 8 Standards of Learning Assessment. Students who take this course will be eligible to enroll in Algebra I in middle school.

M208 Mathematics 8
Grades 7 and 8 - Year
Prerequisite: Mathematics 7
Mathematics 8 is the third of three courses in middle school preparing students for the study of high school algebra, geometry and physics. The eighth-grade curriculum expounds upon proportional reasoning as students solve a variety of problems. Students find the volume and surface area of more complex three-dimensional figures and apply transformations to geometric shapes in the coordinate plane. Students will verify and apply the Pythagorean Theorem creating a foundation for further study of triangular relationships in geometry. Students will represent data, both univariate and bivariate data, and make predictions by observing data patterns. Students build upon the algebraic concepts developed in Mathematics 6 and 7, which include simplifying algebraic expressions, solving multistep equations and inequalities, and graphing linear functions. The grade eight standards are vital to providing a solid foundation in Algebra I for students in middle school mathematics.

M260 Algebra I
Grades 7 and 8 - Year - 1 Credit
Prerequisite: Mathematics 8 or Mathematics 7/8
In Algebra I, students use the algebraic skills developed in Math 6, 7, and 8 to represent and solve a variety of practical problems. Tables and graphs will be used to interpret algebraic expressions, equations, and inequalities, and to analyze behaviors of functions. Graphing calculators, computers, and other appropriate technology will be utilized.

M263 Geometry
Grade 8 - Year - 1 Credit
Prerequisite: Algebra I
This course emphasizes coordinates, transformational geometry and measurement, theorems, and formal definitions of geometric terms. Students will work with proofs requiring applications of logic. Students will also solve numerical and algebraic problems which apply geometric concepts. Calculators, computers and graphing utilities are used.

MC02 Mathematics Workshop
Grade 6 - Semester
MC04 Mathematics Workshop
Grade 7 - Semester
MC06 Mathematics Workshop
Grade 8 - Semester
This course is designed for students who need support in mathematics for learning and understanding. Students are recommended for this course based upon multiple criteria including grade level standardized assessments and teacher recommendation. The course focuses on number sense, problem solving, mathematical connections, and representations. Multiple strategies, manipulative materials, and technology will be utilized to support student learning. The course will include work with whole numbers, decimals, fractions, ratios, proportions, geometry, measurement, probability, and statistics. Results from assessments at the end of each semester will be used to determine whether students will exit or continue this course. This course can be a semester or a full year.

MC08 -Mathematics Workshop
Grade 6 - Year
MC10 Mathematics Workshop
Grade 7 - Year
MC12 Mathematics Workshop
Grade 8 - Year
This course is designed for students who need support in mathematics for learning and understanding. Students are recommended for this course based upon multiple criteria including grade level standardized assessments and teacher recommendation. The course focuses on number sense, problem solving, mathematical connections, and representations. Multiple strategies, manipulative materials, and technology will be utilized to support student learning. The course will include work with whole numbers, decimals, fractions, ratios, proportions, geometry, measurement, probability, and statistics. Results from assessments at the end of each semester will be used to determine whether students will exit or continue this course. This course can be a semester or a full year.

MC01 (Level 1) Reading/Writing Workshop
Grade 6 - Semester
MC03 (Level 2) Reading/Writing Workshop
Grade 7 - Semester
MC05 (Level 3) Reading/Writing Workshop
Grade 8 - Semester
This course is designed for students who need support in reading for learning and understanding. Students are recommended for this course based upon multiple criteria including grade level standardized assessments, a comprehensive reading inventory, and teacher recommendation. The course will focus on phonological awareness, vocabulary development, reading fluency, strategic reading skills, and writing. Results from assessments at the end of each semester will be used to determine whether students will exit or continue this course. This course can be a semester or full-year course.

MC07 (Level 1) Reading/Writing Workshop
Grade 6 - Year
MC09 (Level 2) Reading/Writing Workshop
Grade 7 - Year
MC11 (Level 3) Reading/Writing Workshop
Grade 8 - Year
This course is designed for students who need support in reading for learning and understanding. Students are recommended for this course based upon multiple criteria including grade level standardized assessments, a comprehensive reading inventory, and teacher recommendation. The course will focus on phonological awareness, vocabulary development, reading fluency, strategic reading skills, and writing. Results from assessments at the end of each semester will be used to determine whether students will exit or continue this course. This course can be a semester or full-year course.

P600 Health and Physical Education
Grade 6 - Year
Students in Grade 6 will combine fundamental skills into more complex movement forms in units such as physical fitness and conditioning, rhythmic activities, gymnastics, soccer, basketball, softball, and volleyball. Students will begin to experience recreational activities such as skating and bowling. Students will assess their health-related fitness status and set reasonable, appropriate goals for development and improvement. Students will understand health issues and practice health skills in the following areas: nutrition, mental health, diseases, personal growth, family life, personal health, safety, and first aid.

P601 Health and Physical Education
Grade 7 - Year
Students in Grade 7 will continue to develop competence in modified versions of game/sport, dance, and recreational activities. Instruction will include physical fitness, flag football, bowling, soccer, rhythms, basketball, volleyball, tennis, golf, weight training, softball, and recreational pursuits. The student will analyze skill performance and set reasonable and appropriate goals for improvement and maintenance of health-related fitness. Health 7 objectives include: basic first aid, nutrition, diseases, family life, consumer health, environmental health, and mental health. The goal is to exhibit a healthy lifestyle, interpret health information, and promote good health.

P602 Health and Physical Education
Grade 8 - Year
Students should begin to develop competence in lifetime game/sport activities. Instruction in physical education should include physical fitness, soccer, basketball, tennis, bowling, volleyball, weight training, softball, and recreational pursuits. Recreational pursuits may include skating, orienteering, cycling, ropes courses, backpacking, hiking, canoeing, and rock climbing. Students will set goals, track progress, and participate in activities to improve lifetime health-related fitness. Health units include: personal growth and development, body systems, family life, and substance abuse.

S301 Life Science
Grade 7 - Year
The Life Science course emphasizes a more complex understanding of change, cycles, patterns, and relationships in the living world. Students build on basic principles related to these concepts by exploring the cellular organization and the classification of organisms; the dynamic relationships among organisms, populations, communities and ecosystems; and change as a result of the transmission of genetic information from generation to generation. Inquiry skills at this level include organization and mathematical analysis of data, manipulating variables in experimentation, and identifying sources of experimental error. Science process skills and experimentation are emphasized.

S302 Science
Grade 6 - Year
The 6th grade science standards continue to emphasize investigations. The concepts of change are explored through the study of transformations of energy, matter, and basic chemistry concepts. The standards present an integrated focus on the role of the sun's energy in the solar system as well as Earth's systems; the hydrosphere, atmosphere, and biosphere. Natural resource management and participation in a Meaningful Watershed Educational Experience (MWEE) are part of this year-long curriculum.

S303 Physical Science
Grade 8 - Year
The Physical Science course stresses a more in-depth understanding of the nature and structure of matter and the characteristics of energy. Major areas covered include: the periodic table; physical and chemical changes; nuclear reactions; temperature and heat; sound; light; electricity and magnetism; and work, force, and motion. The Physical Science course continues to build on skills of systematic investigation with a clear focus on variables and repeated trials. Students will plan and conduct research involving both classroom experimentation and research methods and skills. Students will share their work using written reports, core labs and other presentations.

S305 Environmental Science
Grades 6, 7 and 8 - Semester
Like other sciences, environmental science is a process of studying why things are the way they are and how things happen the way they do. In this course you might find the answer to such questions as: How can frogs give us clues about the quality of our environment? How can recycling help us save fossil fuels? How can the extinction of an insect cause severe damage to the rain forest? How can watering the lawn affect the water quality of a nearby stream? If you are interested in the environment in which you live and how you can help protect it, then this is the course for you. *NOTE: Students should pair this course with another middle school semester course.*

High School Courses Guide

Agriculture, Environmental Studies and Natural Resources

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
PA65	Introduction to Power, Structural and Technical Systems	•	•	•		•		1			53
PA60	Agricultural Fabrications and Emerging Technologies		•	•	•	•		1		PA65	53
PA60C	Agricultural Fabrications and Emerging Technologies (Co-op)		•	•	•	•		2		PA65	53
PA66	Agricultural Power Systems		•	•	•	•		1		PA65	53
PA66C	Agricultural Power Systems (Co-op)		•	•	•	•		2		PA65	53
PA70	Horticultural Sciences	•	•	•	•	•		1			53
PA71	Landscaping I		•	•	•	•		1		PA70	53
PA71C	Landscaping I (Co-op)		•	•	•	•		2		PA70	53
PA72	Greenhouse Plant Production and Management		•	•	•	•		1		PA70	53
PA72C	Greenhouse Plant Production and Management (Co-op)		•	•	•	•		2		PA70	53
PA68	Turfgrass Establishment and Maintenance		•	•	•	•		1		PA65 or PA70	53
PA68C	Turfgrass Establishment and Maintenance (Co-op)		•	•	•	•		2		PA65 or PA70	53
PA69	Turfgrass Applications ADV			•	•	•		1		PA68	53
PA69C	Turfgrass Applications ADV (Co-op)			•	•	•		2		PA68	53
PA69J	Turfgrass Applications ADV (Dual Enrollment RCC)									PA68	53
PA73	Floriculture		•	•	•	•		1		PA70	53
PA73C	Floriculture (Co-op)		•	•	•	•		2		PA70	53

Art

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
C194	Graphic Arts I	•	•	•	•	•		1			35
C195	Graphic Arts II		•	•	•	•		1		C194	35
FA01	Art I	•	•	•	•	•		1			40
FA02	Art II		•	•	•	•		1		FA01	40
FA03	Art III			•	•	•		1		FA02	40
FA12	Art III ADV			•	•	•		1	•	FA02	40
FA04	Art IV				•	•		1		FA03	40
FA13	Art IV ADV				•	•		1	•	FA03	40
FA06	Crafts II		•	•	•	•		1		FA01	40
FA07	Crafts III			•	•	•		1		FA06	40
FA14	Crafts III ADV			•	•	•		1	•	FA06	40
FA08	Crafts IV				•	•		1		FA07	40
FA15	Crafts IV ADV				•	•		1	•	FA07	40
FA09	Photography I		•	•	•	•		1			40
FA16	Photography II			•	•	•		1		FA09	40
FA60	2D Design AP			•	•	•		1	•	C195 or FA16	42

Art, continued

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
FA830	Visual Arts SL IB			•	•	•		1	•	FA01 and FA02	42
FA831	Visual Arts HL-A IB			•		•		1	•	FA01 and FA02	42
FA832	Visual Arts HL-B IB				•	•		1	•	FA831	42
FA840	Film SL-A IB			•		•		1	•		43
FA841	Film SL-B IB				•	•		1	•	FA840	43
FA842	Film HL-A IB			•		•		1	•		43
FA843	Film HL-B IB				•	•		1	•	FA842	43

Business & Marketing

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
PA01	Computer Information Systems	•	•	•	•	•		1			51
PA11	Business Law		•	•	•		•	1/2			51
PA12	Business Management		•	•	•		•	1/2			51
PA38	Virginia Teachers for Tomorrow I			•	•	•			•		52
PA42	Virginia Teachers for Tomorrow II				•	•			•		52
PA40	Education for Employment	•	•	•	•	•		1			52
PA40C	Education for Employment (Co-op)	•	•	•	•	•		2			52
PA41	Education for Employment (Semester)	•	•	•	•		•	1/2			52
PA41C	Education For Employment (Co-op / Semester)	•	•	•	•		•	1			52
PA43	Jobs for Virginia Graduates				•	•					52
PA17	Principles of Business and Marketing	•	•			•		1			51
PA46	Marketing		•	•		•		1		PA17	52
PA46C	Marketing (Co-op)		•	•		•		1		PA17	52
PA47	Marketing ADV			•	•	•		1		PA46 or PA49	52
PA47C	Marketing ADV (Co-op)			•	•	•		1		PA46 or PA49	52
PA50	Entrepreneurship			•	•	•		1			52
PA50C	Entrepreneurship (Co-op)			•	•	•		1			52
PA49	Sports and Entertainment Marketing			•	•	•		1			52
PA49C	Sports and Entertainment Marketing (Co-op)			•	•	•		1			52

Communications

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
C189	Introduction to Mass Communications I	•	•	•	•	•		1			35
C192	Television Production II		•	•	•	•		1	•	C189	35
C193	Television Production III			•	•	•		2		C189 and C192	35
E196	Yearbook II		•	•	•	•		1		C189	37
E197	Yearbook III			•	•	•		1		C189 and E196	37
E195	Newspaper II		•	•	•	•		1		C189	37
E198	Newspaper III			•	•	•		1		C189 and E195	37

Communications, continued

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
E199 - E200	Mass Communications IV - Newspaper IV, Yearbook IV				•	•		1	•	C189 and E195, E198, or E196, E197	37
C196	TV Production IV				•	•		2	•	C189, C192, C193	35
CE02	Internship				•	•		1			35

Economics and Personal Finance

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
EPF100	Economics and Personal Finance		•	•	•	•		1			37
EPF102	Economics and Personal Finance		•	•	•		•	1/2			38

English/Language Arts

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
E111J	College Composition I				•		•	1/2	•		35
E112J	College Composition II				•		•	1/2	•		35
E140	Composition Theory		•	•	•	•		1			35
E151	English 9 ADV	•				•		1	•		36
E751	English 9 Pre-Baccalaureate	•				•		1	•		37
E152	English 9	•				•		1			36
E157	English 10 ADV		•			•		1	•		36
E757	English 10 Pre-Baccalaureate		•			•		1	•		37
E158	English 10		•			•		1			36
E160	English 11: Language and Composition AP			•		•		1	•		36
E162	English 11 ADV			•		•		1	•		36
E163	English 11			•		•		1			36
E170	English 12: Literature and Composition AP				•	•		1	•		36
E173	English 12				•	•		1			36
E174	English 12 ADV				•	•		1	•		36
E182[1]	ESL I	•	•	•	•	•		1			37
E183[1]	ESL II		•	•	•	•		1			37
E184[1]	ESL III			•	•	•		1			37
E185[1]	ESL IV			•	•	•		1			37
E188[1]	ESL V			•	•	•		1			37
E176	Creative Writing I		•	•	•	•		1			36
E178	Creative Writing II			•	•	•		1		E176	36
E800	English HL-A IB			•		•		1	•		37
E801	English HL-B IB				•	•		1	•	E800	37

[1]Unless already identified with an IEP or 504 plan, English Language Learners should not be placed in collaborative classes.

Gifted

Academically gifted students are encouraged to enroll in the most challenging courses available to them. Identified gifted students in art and music are encouraged to enroll in elective courses in their talent area. Rigorous courses and acceleration options help teachers provide appropriately differentiated instructional programs.

COURSE NO.	COURSE TITLE	GRADE LEVEL				YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
		9	10	11	12						
CR55	Mentorship			•	•		•	1/2			35
GS9-12	Governor's School for Government and International Studies	•	•	•	•						43
CR54	Emerging Leaders				•			1			35

Health and Physical/Driver Education

COURSE NO.	COURSE TITLE	GRADE LEVEL				YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
		9	10	11	12						
P651	Health and Physical Education	•				•		1			51
P660/P667	Health		•			•		1			51
P670	Driver Education						•	0			51
P680	Health and Physical Education			•		•		1		P651 and P660/ P667	51
SPM300	Sports Medicine/Athletic Training			•	•	•		1			56

History and Social Science

COURSE NO.	COURSE TITLE	GRADE LEVEL				YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
		9	10	11	12						
H470	Modern Global Studies	•	•	•	•	•		1			44
H471	Modern Global Studies ADV	•	•	•	•	•		1	•		44
H474	Sociology	•	•	•	•		•	1/2			44
H551	World History I	•	•			•		1			44
H552	World History I ADV	•	•			•		1	•		44
H553	World History II	•	•			•		1			44
H554	World History II ADV	•	•			•		1	•		44
H754	World History II Pre-Baccalaureate	•				•		1	•		44
H473	Current Affairs		•	•	•		•	1/2			44
H477	Psychology I		•	•	•	•		1			44
H478	Psychology AP		•	•	•	•		1	•		44
H468	Virginia and U.S. Government			•	•	•		1			44
H466	Virginia and U.S. Government ADV				•	•		1	•		43
H766	Virginia and U.S. Government Pre-Baccalaureate		•			•		1	•		45
H467	United States Government and Politics AP				•	•		1	•	H551 / H552 and H553 / H554 / H754 or H459 or H460 or H470 or H471	44
H459	Virginia and U.S. History			•	•	•		1			43
H460	Virginia and U.S. History ADV			•	•	•		1	•		43

History and Social Science, continued

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
H457	United States History AP			•	•	•		1	•	H551 / H552 or H553 / H554 / H754 or H470 or H471	43
H480	European History AP		•	•	•	•		1	•	H551 / H552 or H553 / H554 or H754	44
H802	History of the Americas HL-A IB			•		•		1	•		45
H803	History of the Americas HL-B IB				•	•		1	•	H802	45
H815	Philosophy SL IB			•	•	•		1	•		45
H813	Psychology SL IB			•	•	•		1	•		45
H875	Economics SL IB			•	•	•		1	•		45
T817Y	Theory of Knowledge (TOK) A IB			•		•		1	•	*	56
T818Y	Theory of Knowledge (TOK) B IB				•	•		1	•	*	56

Mathematics

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
M252/ M260	Algebra I Part 1 / Algebra I Part 2	•	•	•		•		1		M208	48
M260	Algebra I	•	•	•		•		1		M208	48
M264/ M263	Geometry Part 1 / Geometry Part 2	•	•	•	•	•		1		M260	48
M261	Algebra, Functions, and Data Analysis	•	•	•	•	•		1		M260	48
M263	Geometry	•	•	•	•	•		1		M260	48
M265	Algebra II	•	•	•	•	•		1		M263	48
M765	Algebra II Pre-Baccalaureate	•	•			•		1	•	M263	49
M266	Algebra III with Trigonometry	•	•	•	•	•		1		M265	48
M268	Precalculus		•	•	•	•		1	•	M265	48
M768	Precalculus Pre-Baccalaureate		•	•		•		1	•	M265	49
M270	Statistics AP		•	•	•	•		1	•	M265	48
M269	Calculus AB AP			•	•	•		1	•	M268	48
M273	Calculus BC AP			•	•	•		1	•	M269 *	49
M271	Probability & Statistics			•	•		•	1/2		M265	49
M272	Discrete Mathematics			•	•		•	1/2		M265	49
M804	Math Studies SL IB			•	•	•		1	•	M266 or M268	49
M807	Mathematics SL IB			•	•	•		1	•	M268	49
M808	Mathematics HL-A IB			•		•		1	•	M268	50
M809	Mathematics HL-B IB				•	•		1	•	M808	50

Military Science

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
MS101	Naval Science I	•				•		1			50
MS102	Naval Science II		•			•		1		MS101	50
MS103	Naval Science III			•		•		1		MS102	50
MS105	Naval Science III ADV			•		•		1	•	MS102 *	50
MS104	Naval Science IV				•	•		1		MS103/ MS105	50
MS106	Naval Science IV ADV				•	•		1	•	MS103/ MS105 *	50
MS201	Aerospace Science I	•				•		1			50
MS202	Aerospace Science II		•			•		1		MS201	50
MS203	Aerospace Science III			•		•		1		MS202	51
MS205	Aerospace Science III ADV			•		•		1	•	MS202 *	51
MS204	Aerospace Science IV				•	•		1		MS203/ MS205	51
MS206	Aerospace Science IV ADV				•	•		1	•	MS203/ MS205 *	51

Performing Arts

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
FA40	Theater Arts: Introduction to Theater	•	•	•	•	•		1			41
FA41	Theater Arts: Dramatic Literature and Theater History		•	•	•	•		1		FA40	41
FA49	Theater Arts: Advanced Acting and Directing		•	•	•	•		1	•	FA40 *	42
FA27	Concert Band	•				•		1		*	41
FA30	Concert Band		•			•		1		*	41
FA31	Concert Band			•		•		1		*	41
FA32	Concert Band				•	•		1		*	41
FA33	Symphonic Band	•	•	•	•	•		1		*	41
FA34	Jazz Ensemble	•	•	•	•	•		1		*	41
FA44	Jazz Ensemble ADV	•	•	•	•	•		1	•	*	42
FA36	Wind Ensemble	•	•	•	•	•		1		*	41
FA48	Wind Ensemble ADV	•	•	•	•	•		1	•	*	42
FA35	String Ensemble	•	•	•	•	•		1		*	41
FA42	String Orchestra	•	•	•	•	•		1		*	41
FA46	String Orchestra ADV	•	•	•	•	•		1	•	*	42
FA22	Beginning Choir	•				•		1			41
FA20	Concert Choir		•	•	•	•		1			41
FA21	Mixed Show Choir (SATB)	•	•	•	•	•		1		*	41
FA45	Mixed Show Choir (SATB) ADV	•	•	•	•	•		1	•	*	42
FA23	Men's Choir	•	•	•	•	•		1			41
FA24	Treble Choir		•	•	•	•		1			41
FA25	Girls' Show Choir	•	•	•	•	•		1		*	41
FA47	Girls' Show Choir ADV	•	•	•	•	•		1	•	*	42
FA50	Chamber Vocal Ensemble ADV	•	•	•	•	•		1	•	*	42

Performing Arts, continued

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
FA26	Music Theory		•	•	•	•		1			41
FA43	Music Theory AP		•	•	•	•		1	•	*	41
FA850	Music IB			•	•	•		1	•	*	43

Science

The science courses offered at Hanover County Public Schools are designed to guide students toward scientific literacy. The scope of scientific knowledge is built from the elementary through the secondary level using a specific sequence of skills. Each grade level and/or course offers unique learning experiences in life science, physical science, earth science, and scientific investigation, reasoning and logic. By exploring concepts within the laboratory, with computers, or by using group investigation, students are able to develop critical thinking, reasoning, and problem-solving skills. Emphasis is placed on the skills necessary to examine alternative scientific explanations, actively conduct controlled experiments within laboratory safety guidelines, analyze and communicate information, and acquire and use scientific literature. Students will be encouraged to share their ideas, use the language of science, and discuss problem-solving techniques. Students in the advanced, AP, and IB high school sciences will be encouraged to submit their research projects to the Metro Richmond Science Fair and/or the Virginia Junior Academy of Science (VJAS).

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
S355	Biology I		•			•		1			53
S354	Biology I ADV	•	•			•		1	•		53
S754	Biology I Pre-Baccalaureate	•				•		1	•		55
S371	Earth Science	•				•		1			54
S374	Earth Science ADV	•				•		1	•		55
S358	Anatomy/Physiology			•	•	•		1		S355/ S354 or S754	53
S357	Ecology			•	•	•		1		S355/ S354 or S754	53
S362	Chemistry I			•	•	•		1		M263	54
S361	Chemistry I ADV		•	•	•	•		1	•	S355/ S354 or S754 M263	54
S761	Chemistry I Pre-Baccalaureate		•			•		1	•	S355/ S354 or S754 M263	55
S368	Oceanography		•	•	•	•		1		S355/ S354 or S754	54
S365	Physics I		•	•	•	•		1		M260	54
S360	Introduction to Biotechnology			•	•	•		1		S355/ S354 or S754	54
S359	Biology AP			•	•	•		1	•	S355/ S354 or S754 and S362/ S361 or S761	54
S363	Chemistry AP			•	•	•		1	•	S362/ S361 or S761 and M265	54
S370	Environmental Science AP		•	•	•	•		1	•	S355/ S354 or S754 and S362/ S361 or S761	54

Science, continued

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
S372	Physics I AP		•	•	•	•		1	•	M266 or M268 / M768	54
S373	Physics II AP			•	•	•		1	•	S372	55
S367	Physics C AP			•	•	•		1	•	S373 and M269 or M273 M265	54
S808	Chemistry SL IB			•	•	•		1	•	S362/ S361 or S761 and M265	55
S809	Chemistry HL-A IB			•		•		1	•	S362/ S361 or S761 and M265	55
S810	Chemistry HL-B IB				•	•		1	•	S809	55
S805	Biology SL IB			•	•	•		1	•	S355/ S354 or S754 and S362/ S361 or S761	55
S806	Biology HL-A IB			•		•		1	•	S355/ S354 or S754 and S362/ S361 or S761	55
S807	Biology HL-B IB				•	•		1	•	S806	55
S811	Physics SL IB			•	•	•		1	•	M266/ M268 or M768 M265	55

Technology: Computer Programming and Computer Assisted Drafting

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
M287	Computer Mathematics	•	•	•	•	•		1		M260	49
M286	Programming	•	•	•	•	•		1		M260	49
M283	AP Computer Science A			•	•	•		1	•	M284	49
M284	Programming Advanced		•	•	•	•		1	•	M286	49
M288	AP Computer Science Principles			•	•	•		1	•		49
PA20	Technical Drawing and Design	•	•	•	•	•		1			51
PA22	Engineering Drawing and Design		•	•	•	•		1		PA20	52
PA21	Architectural Drawing			•	•	•		1		PA20	51
PA23	Drawing & Design ADV			•	•	•		1	•	PA21 or PA22	52
M285	Computer Science SL IB			•	•	•		1	•		49
M810	Computer Science HL-A IB			•		•		1	•		50
M811	Computer Science HL-B IB				•	•		1	•		50
IT800	Information Technology for a Global Society SL IB			•	•	•		1	•		48
IT812	Design Technology SL IB			•	•	•		1	•		48

World Languages

Availability of any world language class is dependent upon sufficient enrollment and the necessary staffing. All classes cover curriculum over a full academic year, and upon successful completion of a course, the student receives a Carnegie unit of credit. Students in world language classes take division-wide semester and final exams.

COURSE NO.	COURSE TITLE	GRADE LEVEL				YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
		9	10	11	12						
F570	Latin I	•	•	•	•	•		1			38
F571	Latin II		•	•	•	•		1		F570	38
F572	Latin III			•	•	•		1		F571	39
F573	Latin IV	•	•	•	•	•		1	•	F572	39
F574	Latin V		•	•	•	•		1	•	F573	39
F575	Latin VI			•	•	•		1	•	F574	39
F812	Latin SL-A IB			•	•	•		1	•	F573	40
F813	Latin SL-B IB			•	•	•		1	•	F812 or F574	40
F590	Spanish I	•	•	•	•	•		1			39
F591	Spanish II		•	•	•	•		1		F590	39
F592	Spanish III			•	•	•		1		F591	39
F593	Spanish IV	•	•	•	•	•		1	•	F592	39
F793	Spanish IV Pre-Baccalaureate	•	•	•		•		1	•	F592	39
F594	Spanish V		•	•	•	•		1	•	F593	39
F595	Spanish VI			•	•	•		1	•	F594	39
F805	Spanish SL-A IB			•	•	•		1	•	F593	39
F806	Spanish SL-B IB			•	•	•		1	•	F805 or F594	39
F550	French I	•	•	•	•	•		1			38
F551	French II		•	•	•	•		1		F550	38
F552	French III			•	•	•		1		F551	38
F553	French IV	•	•	•	•	•		1	•	F552	38
F554	French V		•	•	•	•		1	•	F553	38
F555	French VI			•	•	•		1	•	F554	38
F811	French SL A IB			•	•	•		1	•	F553	40
F814	French SL B IB			•	•	•		1	•	F811 or F554	40
F560	German I	•	•	•	•	•		1			38
F561	German II		•	•	•	•		1		F560	38
F562	German III		•	•	•	•		1		F561	38
F563	German IV	•	•	•	•	•		1	•	F562	38
F564	German V		•	•	•	•		1	•	F563	38
F565	German VI			•	•	•		1	•	F564	38
F808	German SL-A IB			•	•	•		1	•	F563	39
F809	German SL-B IB			•	•	•		1	•	F809 or F564	39

***NOTE: Courses have additional prerequisites not listed here. See the course description for details on the full prerequisites for these courses.**

Specialized High School Courses Guide

The Hanover Center for Trades and Technology

The Hanover Center for Trades and Technology (THCTT) offers programs to students in grades 11 and 12 from all high schools. The areas of instruction include: Automotive Technology; Electricity; Carpentry; Heating, Ventilation and Air Conditioning (HVAC); Cosmetology; and Culinary Arts. Programs at The Hanover Center for Trades and Technology will prepare students for a wide range of opportunities including post-secondary education, apprenticeships and career pathway success.

Programs are designed in two or three sequential learning levels. Students will attend classes every other day for three blocks with transportation provided from each sending school.

Courses at THCTT will provide the following:

- Three elective credits upon successful completion of each course for a total of six elective credits over the two years in their program
- Content based on current industry standards
- Content based on Virginia's Workplace Readiness Skills
- Industry based credential assessment opportunities
- Avenues for a work-based learning experience after completion of competencies
- Leadership training experiences through student leadership organizations such as Skills USA

COURSE NO.	COURSE TITLE	GRADE LEVEL				YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
		9	10	11	12						
TS100	Automotive Technology I			•		•		3			56
TS101	Automotive Technology II				•	•		3		TS100	56
TS124	Carpentry I			•		•		3			57
TS125	Carpentry II				•	•		3		TS124	57
TS109	Cosmetology I			•		•		3			56
TS110	Cosmetology II				•	•		3		TS109	57
TS117	Culinary Arts I			•		•		3			57
TS118	Culinary Arts II				•	•		3		TS117	57
TS126	Electricity I			•		•		3			57
TS127	Electricity II				•	•		3		TS126	57
TS122	Heating, Ventilation, Air Conditioning and Refrigeration I			•		•		3			57
TS123	Heating, Ventilation, Air Conditioning and Refrigeration II				•	•		3		TS122	57
TA841	Youth Apprenticeship				•	•		3 (max.)			56

Hanover High School Specialty Center

Students at all Hanover County high schools are eligible to enroll in these courses taught only at Hanover High School. Transportation will be provided from students' home schools to Hanover High. The Specialty Center at Hanover High School offers STEM-H courses that will engage students in innovative, relevant, hands-on learning, designed to prepare students to enter the workforce or post-secondary education in Health Sciences, Public Safety, and STEM fields. The Specialty Center will utilize community, industry, and higher education partnerships to further the students' exposure to STEM-H skills and careers.

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
HN101E	Electronics I: Electronics/Industrial Robotics Technology	•	•	•	•	•		2	•	M260	45
HN102E	Electronics II: Electronics Technology		•	•	•	•		2	•	HN101E	45
HN103E	Electronics III: Industrial Robotics Technology			•	•	•		2	•	HN102E	45
HN2000	Design, Multimedia, and Web Technologies	•	•	•	•	•		2	•		45
HN4010	Engineering Exploration I	•	•	•	•	•		2	•	M260	45
HN4011	Engineering Concepts and Processes II		•	•	•	•		2	•	HN4010	45
HN5000	Public Safety			•	•	•	•	2			46
HN5010	Criminal Justice I			•	•	•	•	2			46
HN5011	Criminal Justice II				•	•	•	2		HN5010	46
HS0105	Firefighting			•	•	•		2			46

The Reynolds Advance College Academy

The Reynolds Advance College Academies (ACA) provide outstanding high school students the opportunity to earn an associate degree while completing the requirements for their high school diploma. We have carefully selected and sequenced the college curriculum and courses in the program in order to satisfy the requirements of the high school diploma and associate degree at the same time.

Students will apply to an ACA in the 8th grade, enroll in advanced high school courses in the 9th grade, and take the required college coursework for the associate degree during the 11th and 12th grades. Students in the ACA program are required to attend a four-week session of college courses during the summer between their sophomore and junior year.

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
ACAE100	Survey of English Literature II				•		•	1/2	•	ACAE112	34
ACAE101	Survey of American Literature II				•		•	1/2	•	ACAE112	34
ACAE111	College Composition I			•			•	1/2	•		34
ACAE112	College Composition II			•			•	1/2	•	ACAE111	34
ACAF550	Beginning French I			•	•		•	1/2	•		34
ACAF551	Beginning French II			•	•		•	1/2	•	ACAF550	34
ACAF590	Intermediate Spanish I			•	•		•	1/2	•	F592	34
ACAF591	Intermediate Spanish II			•	•		•	1/2	•	ACAF590	34
ACAM100	Precalculus with Trigonometry			•	•		•	1/2	•		34
ACAM101	Statistics			•	•		•	1/2	•		34
ACAS105	General Biology I			•	•		•	1/2	•		34
ACAS106	General Biology II			•	•		•	1/2	•	ACAS105	34
ACAH102	United States Government I				•		•	1/2	•		34
ACAH103	United States Government II				•		•	1/2	•	ACAH102	34
ACAH104	United States History I			•			•	1/2	•		34
ACAH105	United States History II			•			•	1/2	•	ACAH104	34
ACAH106	Principles of Psychology			•	•	•	•	1/2	•		34
ACAH107	Developmental Psychology			•	•	•	•	1/2	•		34

The Health Sciences Center Program

Beginning in 2016-17, students in 9th grade can apply for acceptance into the four-year Health Sciences Center where they will become full-time Hanover High School students. The students' schedules will be enriched with Health Sciences curriculum, and they will choose an area of specialization after their 10th grade year from the following career pathways: Pharmacy Technician, Sports Medicine, Emergency Medical Technician, Nurse Aide and Biotechnology Research and Development.

COURSE NO.	COURSE TITLE	GRADE LEVEL				YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
		9	10	11	12						
HN9300	Nurse Aide			•	•			2			46
HN9302	Patient Care Technician				•	•		2		HN9300	46
HN910	Pharmacy I			•	•	•		2	•		46
HN912	Pharmacy II				•	•		2	•	HN910	46
HS0111	Emergency Medical Technician			•	•	•		2			46
HS1000	Introduction to Health and Medical Sciences	•				•		1			46
HS1020	Medical Terminology		•			•		1			46
HS1300	Sports Medicine/Athletic Trainer I			•		•		2			47
HS1301	Sports Medicine/Athletic Trainer II				•	•		2		HS1300	47
HSE162	Health Science English 11 ADV			•		•		1	•		47
HSE163	Health Science English 11			•		•		1			47
HSS355	Health Science Biology	•				•		1			47
HSS354	Health Science Biology ADV	•				•		1	•		47
HSS362	Health Science Chemistry		•			•		1			47
HSS361	Health Science Chemistry ADV		•			•		1	•		47
HSS380	Biotechnology Foundations in Technical Education			•				2			47
HSS381	Bioengineering				•			2		HSS380	48
HSH470	Health Science Modern Global Studies – Standard	•				•		1			47
HSH471	Health Science Modern Global Studies ADV	•				•		1	•		47
HSP651	Health Science Health & Physical Education	•				•		1			47

Advanced Placement Courses

COURSE NO.	COURSE TITLE	GRADE LEVEL				YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
		9	10	11	12						
E160	English 11: Language and Composition AP			•		•		1	•		36
E170	English 12: Literature and Composition AP				•	•		1	•		36
FA60	2D Design AP			•	•	•		1	•	C195 or FA16	42
H457	American History AP			•	•	•		1	•	H551 / H552 or H752 or H553 / H554 or H754 or H470	43
H467	Government and Politics AP				•	•		1	•	H551 / H552 / H752 or H553 / H554 / H754 and H459 or H460 or H470	44
H478	Psychology AP		•	•	•	•		1	•		44
H480	European History AP		•	•	•	•		1	•	H551 / H552 or H752 H553 / H554 or H754	44
M269	Calculus AB AP			•	•	•		1	•	M268	48
M270	Statistics AP		•	•	•	•		1	•	M265	48
M273	Calculus BC AP			•	•	•		1	•	M269 *	49
M283	AP Computer Science A			•	•	•		1	•	M284	49
M288	AP Computer Science Principles	•	•	•	•	•		1	•		49
S359	Biology AP			•	•	•		1	•	S355/ S354 or S754 and S362/ S361 or S761	54
S363	Chemistry AP			•	•	•		1	•	S362/ S361 or S761 and M265	54
S367	Physics C AP			•	•	•		1	•	S373 and M269 or M273	54
S370	Environmental Science AP		•	•	•	•		1	•	S355/ S354 or S754 and S362/ S361 or S761	54
S372	Physics I AP		•	•	•	•		1	•	M266 or M268 / M768	54
S373	Physics II AP			•	•	•		1	•	S372	55

International Baccalaureate Courses

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
E800	English HL-A IB			•		•		1	•		37
E801	English HL-B IB				•	•		1	•	E800	37
F812	Latin SL-A IB			•	•	•		1	•	F573	40
F813	Latin SL-B IB			•	•	•		1	•	F812 or F574	40
F805	Spanish Sl-A IB			•	•	•		1	•	F593	39
F806	Spanish SL-B IB			•	•	•		1	•	F805 or F594	39
F811	French Sl A IB			•	•	•		1	•	F553	40
F814	French Sl B IB			•	•	•		1	•	F811 or F554	40
F808	German SL-A IB			•	•	•		1	•	F563	39
F809	German Sl-B IB			•	•	•		1	•	F809 or F564	39
FA830	Visual Arts SL IB			•	•	•		1	•	FA01 and FA02	42
FA831	Visual Arts HL-A IB			•		•		1	•	FA01 and FA02	42
FA832	Visual Arts HL-B IB				•	•		1	•	FA831	42
FA840	Film SL-A IB			•		•		1	•		43
FA841	Film SL-B IB				•	•		1	•	FA840	43
FA842	Film HL-A IB			•		•		1	•		43
FA843	Film HL-B IB				•	•		1	•	FA842	43
FA850	Music IB			•	•	•		1	•	*	43
H802	History of the Americas HL-A IB			•		•		1	•		45
H803	History of the Americas HL-B IB				•	•		1	•	H802	45
H815	Philosophy SL IB			•	•	•		1	•		45
H813	Psychology SL IB			•	•	•		1	•		45
H875	Economics SL IB			•	•	•		1	•		45
IT800	Information Technology for a Global Society SL IB			•	•	•		1	•		48
IT812	Desgin Technolgoy SL IB			•	•	•		1	•		48
M285	Computer Science SL IB			•	•	•		1	•		49
M804	Math Studies SL IB			•	•	•		1	•	M266 or M268	49
M807	Mathematics SL IB			•	•	•		1	•	M268	49
M808	Mathematics HL-A IB			•		•		1	•	M268	50
M809	Mathematics HL-B IB				•	•		1	•	M808	50
M810	Computer Science HL-A IB			•		•		1	•		50
M811	Computer Science HL-B IB				•	•		1	•		50
S805	Biology SL IB			•	•	•		1	•	S355/ S354 or S754 and S362/ S361 or S761	55

International Baccalaureate Courses, continued

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
S806	Biology HL-A IB			•		•		1	•	S355/ S354 or S754 and S362/ S361 or S761	55
S807	Biology HL-B IB				•	•		1	•	S806	55
S808	Chemistry SL IB			•	•	•		1	•	S362/ S361 or S761 and M265	55
S809	Chemistry HL-A IB			•		•		1	•	S362/ S361 or S761 and M265	55
S810	Chemistry HL-B IB				•	•		1	•	S809	55
S811	Physics SL IB			•	•	•		1	•		55
T817Y	Theory of Knowledge (TOK) A IB			•		•		1	•	*	56
T818Y	Theory of Knowledge (TOK) B IB				•	•		1	•	*	56

College Campus Programs for Dual Enrollment

COURSE NO.	COURSE TITLE	GRADE LEVEL 9	10	11	12	YEAR	SEMESTER	CREDIT	WEIGHTED CREDIT	Prerequisite Course No.	Page
LUEPF	Economics and Personal Finance			•	•	•		1	•		61
RMC01	College Preview Program				•	•		1	•		61
RMC02	College Preview Program				•	•		1			61
RMC03	College Preview Program				•		•	1/2	•		61
RMC04	College Preview Program				•		•	1/2			61
V0035	Visiting Student Program			•	•	•		1	•		62
V0035	Visiting Student Program			•	•		•	1/2	•		62
V0045	Visiting Student Program			•	•	•		1	•		62
V0045	Visiting Student Program			•	•		•	1/2	•		62
V0015	Advanced Scholars Program			•	•	•		1	•		62
V0015	Advanced Scholars Program			•	•		•	1/2	•		62
V0025	Advanced Scholars Program			•	•	•		1	•		62
V0025	Advanced Scholars Program			•	•		•	1/2	•		62

*NOTE: Courses have additional prerequisites not listed here. See the course description for details on the full prerequisites for these courses.

High School Course Descriptions

*** Denotes college level content and materials are included in this course**

ACAE100 Survey of English Literature II *
Grade 12 - Semester - 1/2 Weighted Credit
Prerequisite: ACAE112
Examines major British texts from the Romantics to the contemporary period, emphasizing the critical ideas and traditions of the British literary tradition. Involves critical reading and writing. ENG 244 has been designated as a "writing intensive" course according to standards developed by the English department.

ACAE101 Survey of American Literature II *
Grade 12 - Semester - 1/2 Weighted Credit
Prerequisite: ACAE112
Examines American literary works from the late-nineteenth century to the present, emphasizing the ideas and characteristics of the American national literature. Involves critical reading and writing. ENG 242 has been designated as a "writing intensive" course according to standards developed by the English department.

ACAE111 College Composition I *
Grade 11 - Semester - 1/2 Weighted Credit
This course introduces students to critical thinking and the fundamentals of academic writing. Through the writing process, students refine topics; develop and support ideas; investigate, evaluate, and incorporate appropriate resources; edit for effective style and usage; and determine appropriate approaches for a variety of contexts, audiences, and purposes. Writing activities will include exposition and analysis with at least one researched essay.

ACAE112 College Composition II *
Grade 11 - Semester - 1/2 Weighted Credit
Prerequisite: ACAE111
This course continues to develop college writing with increased emphasis on critical essays, argumentation, and research, developing these competencies through the examination of a range of texts about the human experience. Students are required to locate, evaluate, integrate, and document sources and effectively edit for style and usage. Students will develop competency in preparing and delivering an oral presentation.

ACAF550 Beginning French I
Grade 11 or 12 - Semester - 1/2 Weighted Credit
Introduces understanding, speaking, reading, and writing skills, and emphasizes basic French sentence structure. Incorporates exposure to the arts, culture, and literature of the areas of the world where French is spoken. Part I of II. May include one additional hour of oral practice per week.

ACAF551 Beginning French II
Grade 11 or 12- Semester - 1/2 Weighted Credit
Prerequisite ACAF550
Introduces understanding, speaking, reading, and writing skills and emphasizes basic French sentence structure. Incorporates exposure to the arts, culture, and literature of the areas of the world where French is spoken. Part II of II. May include one additional hour of oral practice per week.

ACAF590 Intermediate Spanish I
Grade 11 or 12- Semester - 1/2 Weighted Credit
Prerequisite Spanish III
Continues to develop understanding, speaking, reading, and writing skills. Incorporates exposure to the arts, culture, and literature of the areas of the world where Spanish is spoken. Part I of II. May include an additional hour of oral drill and practice per week.

ACAF591 Intermediate Spanish II
Grade 11 or 12- Semester- 1/2 Weighted Credit
Prerequisite ACAF590
Continues to develop understanding, speaking, reading, and writing skills. Incorporates exposure to the arts, culture, and literature of the areas of the world where Spanish is spoken. Part II of II. May include an additional hour of oral drill and practice per week.

ACAH102 United States Government I *
Grade 12 - Semester - 1/2 Weighted Credit
United States Government I teaches structure, operation, and process of national, state, and local governments. Includes in-depth study of the three branches of the government and of public policy. Part I of II.

ACAH103 United States Government II *
Grade 12 - Semester - 1/2 Weighted Credit
United States Government I teaches structure, operation, and process of national, state, and local governments. Includes in-depth study of the three branches of the government and of public policy. Part II of II.

ACAH104 United States History I *
Grade 11 - Semester - 1/2 Weighted Credit
United States History I surveys the United States history from its beginning to the present. Part I of II.

ACAH105 United States History II *
Grade 11 - Semester - 1/2 Weighted Credit
United States History I surveys the United States history from its beginning to the present. HIS 121 and HIS 122 need not be taken in sequence. Part II of II.

ACAH106 Principles of Psychology *
Grades 11 and 12 - Semester - 1/2 Weighted Credit
Principles of Psychology surveys the basic concepts of psychology. Covers the scientific study of behavior and mental processes, research methods and measurement, theoretical perspectives, and application. Includes biological bases of behavior, learning, social interactions, memory, and personality; and other topics such as sensation, perception, consciousness, thinking, intelligence, language, motivation, emotion, health, development, psychological disorders, and therapy.

ACAH107 Developmental Psychology *
Grades 11 and 12 - Semester - 1/2 Weighted Credit
Developmental Psychology studies the development of the individual from conception to death. It follows a life-span perspective on the developmental tasks of the person's physical, cognitive, and psycho-social growth.

ACAM100 Precalculus with Trigonometry *
Grades 11 and 12 - Semester - 1/2 Weighted Credit
Presents college algebra, analytic geometry and trigonometry, and algebraic, exponential and logarithmic functions.

ACAM101 Statistics *
Grades 11 and 12 - Semester - 1/2 Weighted Credit
Presents an overview of statistics, including descriptive statistics, elementary probability, probability distributions estimation, hypothesis testing, and correlation and regression.

ACAS105 General Biology I *
Grades 11 and 12 - Semester - 1/2 Weighted Credit
Focuses on foundations in cellular structure, metabolism, and genetics in an evolutionary context. Explores the core concepts of evolution; structure and function; information flow, storage and exchange; pathways and transformations of energy and matter; and systems biology. Emphasizes process of science, interdisciplinary approach, and relevance of biology to society. Part I of a two-course sequence.

ACAS106 General Biology II *
Grades 11 and 12 - Semester - 1/2 Weighted Credit
Focuses on diversity of life, anatomy and physiology of organisms, and ecosystem organization and processes in an evolutionary context. Explores the core concepts of evolution; structure and function; information flow, storage and exchange; pathways and transformations of energy

and mater; and systems biology. Emphasizes process of science, interdisciplinary approach, and relevance of biology to society. Part II of a two-course sequence.

C189 Introduction to Mass Communications
Grades 9, 10, 11 and 12--Year - 1 Credit
Prerequisite to all Mass Communication II and III courses listed below.
Students will receive an introduction to the history and applications of mass media in today's society, along with the ethical principles that guide those who are involved in communicating information to consumers. A significant part of the instruction will focus on basic skills associated with communicating in writing, using accepted journalistic style. Through frequent writing assignments during the school year, these students will develop proficiency in gathering information and in doing various forms of journalistic writing, such as news and feature writing. They also will begin to understand the editing process, as well as how school publications such as the newspaper and yearbook are produced. They will be taught to use accepted journalistic style for all work, and they will be expected to apply basic rules of grammar, punctuation, and spelling to all work. Other instruction will focus on the rise of broadcasting in providing information and the use of computers in modern communications, including interactive communications such as the Internet. Students who successfully complete this course may apply for internships with TV99 (CE02).

C192 Television Production II *
Grades 10, 11 and 12- Year - 1 Credit
Prerequisite: Introduction to Mass Communications I (C189)
This course is designed for responsible and mature students who may be planning a career in broadcasting or video production. Students will use advanced skills in videography, editing, and writing to produce at least five video products and the morning announcements at each high school. In addition, the students' goal will be to produce broadcast quality material for airing on TV99. This class is designed not only as a hands-on course, but also as a theory course covering history, ratings, career research, and current event topics. Students will be expected to write and make presentations on different issues. Students enrolled in this course are eligible to apply for internships with TV99 (CE02).

C193 Television Production III *
Grades 11 and 12 - Year - 2 Credits
Prerequisite: Introduction to Mass Communications I (C189) and Television Production II (C192)
This course requires students to apply the technical skills learned in the level I and level II courses. Students will create products which will show their ability to pursue advanced study in the area of communications or acquire entry level employment in the field. Students enrolled in this course may apply for internships with TV99 (CE02).
Students will produce the following:
- In-studio and on-location interviews
- Commercials and public service announcements
- News feature or music video
- News show
- Resumé tape

C194 Graphic Arts I
Grades 9, 10, 11 and 12 - Year - 1 Credit
This course is designed to meet the needs of students who are preparing for careers in graphic communication in settings such as government agencies, advertising agencies, architectural firms, and film or print studios. The course will prepare students to integrate visual art and design skills, language and communication skills, business and marketing skills, production, and technology skills. A variety of technologies will be applied including those used in multimedia production, photography, and printing.

C195 Graphic Arts II
Grades 10, 11, and 12 - Year - 1 Credit
Prerequisite: Graphic Arts I
The Graphic Arts II course is designed to facilitate advanced aesthetic and technical skills in the production of products that communicate information visually and verbally. Problem solving for client needs will be emphasized as students use InDesign, PhotoShop, and Illustrator software to produce print ready products. The process of marketing, the use of digital imagery, and industry print considerations for color image production will be included.

C196 TV Production IV *
Grade 12 - Year - 2 Weighted Credits
TV Production will provide a rigorous fourth level class for students. This course is designed to educate talented and committed students in a hands-on program which explores composition, design, movement, storyboarding, and editing. Students will follow an intensive curriculum that will achieve multiple learning and production goals. Students will be encouraged and empowered by instructors to artfully tell their stories through films or documentaries. Students will be provided with leadership experience and real world opportunities in the areas of producing, directing, editing, and filmmaking. Students enrolled in this course are eligible for internships with TV99 (CE02).

CE02 Internship
Grade 12 - Year - 1 Credit
Students who wish to serve an internship in an off-campus setting during their senior year may apply in writing to the high school principal by May 1 of their junior year. Application forms will be available in the counseling office. Students must receive written approval of their application from the high school principal and confirmation of acceptance into the program (from TV99 staff) prior to enrolling in this course.

CR54 Emerging Leaders
Grade 12 - 1 Credit - Pass/Fail
The University of Richmond School of Professional & Continuing Studies and Hanover County Public Schools have formed a partnership to provide an innovative Emerging Leaders Program for gifted high school students. The program includes two components: a Summer Leadership Institute and the Academic Year Continuation. Students submit applications during the winter of their junior year. If enrollment limit is not reached, students not identified as gifted may apply.

CR55 Mentorship
Grades 11 and 12 - Semester - 1/2 Credit - Pass/Fail
Eleventh and twelfth grade academically gifted students have the opportunity to apply for the Mentorship Program which carries 1/2 unit of credit for one semester of study. Students are paired with community professionals in a one-to-one relationship with the intent of providing first hand experience in a career field of the student's choice. In addition to the thirty hours spent with their mentor, the students participate in seminar sessions and project assignments. The deadline for applications is March 15.

E111J College Composition I *
Grade 12 - 3 Semester Credits - 1/2 Weighted Credit
Prerequisite: Satisfactory score on RCC placement test
This course introduces students to critical thinking and the fundamentals of academic writing. Through the writing process, students refine topics; develop and support ideas; investigate, evaluate, and incorporate appropriate resources; edit for effective style and usage; and determine appropriate approaches for a variety of contexts, audiences, and purposes. Writing activities will include exposition and analysis with at least one researched essay.

E112J College Composition II *
Grade 12 - 3 semester credits - 1/2 Weighted Credit
Prerequisite: E111J
This course continues to develop college writing with increased emphasis on critical essays, argumentation, and research, developing these competencies through the examination of a range of texts about the human experience. Students are required to locate, evaluate, integrate, and document sources and effectively edit for style and usage. Students will develop competency in preparing and delivering an oral presentation.

E140 Composition Theory
Grades 10, 11 and 12 - Year - 1 Credit
Composition Theory is an English elective course that teaches students how to operate the writing center and explores an in-depth study of writing across all disciplines. Other areas of focus in the course are utilizing the writing process, understanding and applying standard English, identifying components

of advanced writing across genres and for varied audiences, and becoming an effective peer tutor of writing. This content is applied and assessed as students both produce their own writing and serve as peer tutors in the writing center.

E151 English 9 ADV *
Grade 9 - Year - 1 Weighted Credit
Students will study world literature extensively to develop skills in recognizing themes and applying them to their own experiences. They will focus on communicating this knowledge in appropriate oral and written forms. In addition, students will enrich their knowledge of vocabulary to provide better communication and comprehension skills. Stylistic development in prose style as well as effective use of grammatical conventions will be emphasized in formal and informal essays. Students will learn effective techniques of oral presentation.

E152 English 9
Grade 9 - Year - 1 Credit
Students will study various literary genres to develop skills in recognizing themes and applying them to their own experiences. They will focus on gaining knowledge and understanding of both short stories and novels and communicating this knowledge in appropriate oral and written forms. In addition, students will use a variety of sentence types for effective communication with an emphasis on basic punctuation and usage. They also will enrich their vocabularies to develop better communication and comprehension skills. Finally, students will use the writing process in formal and informal essays, as well as demonstrate proficiency in public speaking.

E157 English 10 ADV *
Grade 10 - Year - 1 Weighted Credit
Students will develop reading and listening proficiencies through interaction with a variety of literary genres and will demonstrate knowledge of the correct usage of language. Vocabulary study will be enhanced through literature study. Developing persuasive, expository, narrative, and descriptive writings will be addressed; however, the focus will be on developing expository writing, which asserts and supports a position. Developing proficiency in public speaking, analyzing consumer information, and writing a résumé also will be addressed in this course.

E158 English 10
Grade 10 - Year - 1 Credit
Students will demonstrate knowledge and understanding of various literary genres including poetry, drama, short stories, nonfiction, and legends. In addition, they will develop persuasive, expository, narrative, and descriptive writings with a focus on expository writing, which asserts and supports a position. Further study will include vocabulary-building, correct language usage, public speaking, and consumer information.

E160 English 11: Language and Composition AP
Grade 11 - Year - 1 Weighted Credit
Students will engage in the careful reading of various literary works. The majority of the works studied in this course will be non-fiction with an American emphasis. Works of fiction including poetry, short stories and novels also will be analyzed. Students will hone understanding of language by analyzing the individual work's language, purpose, and intended audience and will also consider its structure, meaning, and value, and its relationship to contemporary experience as well as the context in which it is written. Additionally, students will study the rhetoric of photographs, films, advertisements, comic strips, and music videos. Students will be involved in the study and practice of writing and will learn to recognize the assumptions underlying various rhetorical strategies. Through speaking, listening, and reading, but chiefly through the experience of their own writing, students should become more aware of the resources of language: connotation, metaphor, irony, syntax, diction, and tone. Assignments will focus on the critical analysis of prose and will include essays in exposition and argument. The desired goals are the honest and effective use of language and the organization of ideas in a clear, coherent, and persuasive way. *NOTE: This course requires summer reading.*

E162 English 11 ADV *
Grade 11 - Year - 1 Weighted Credit
Students will demonstrate a knowledge and understanding of literature of the United States through the study of classic and contemporary American literature themes and characterizations reflective of history and culture. This survey of U.S. literature will serve as the core in developing proficient communication skills. Using a variety of forms, including persuasive, expository, and scientific/technical, students will develop facility in the writing process. Vocabulary instruction will be enriched with literature study and SAT preparation. In addition, with the goal of success in college and professional pursuits, students will demonstrate proficiency in delivering public speeches, composing letters of application, developing résumés, and documenting research papers.

E163 English 11
Grade 11 - Year - 1 Credit
Students will demonstrate a knowledge and understanding of United States literature through the study of classic and contemporary American literature themes and characterizations reflective of history and culture. In addition, students will expand their vocabularies, prepare for the SAT, and demonstrate proficiency in public speaking. Writing instruction will focus on persuasive, expository, narrative, and descriptive writing as well as letters of application, a résumés, and a documented research paper.

E170 English 12: Literature and Composition AP
Grade 12 - Year - 1 Weighted Credit
The course content includes a study of master works of British and world literature. Critical approaches to understanding literature and the composition of critical essays are stressed. In-depth essays which synthesize information from multiple sources are required. Students are encouraged to take the Advanced Placement Examination administered by the College Board and may receive college credit for satisfactory scores. *NOTE: This course requires summer reading.*

E173 English 12
Grade 12 - Year - 1 Credit
Students will analyze British literature and literature of other cultures, recognizing major literary forms and their elements. Vocabulary study as well as correct language usage will be stressed. Along with demonstrating proficiency in public speaking, students will write both persuasive and expository compositions, as well as a documented research paper.

E174 English 12 ADV *
Grade 12 - Year - 1 Credit
Students will demonstrate an understanding of British literature and literature of other cultures, recognizing the various literary elements in texts. The focus will be on analytical and critical literary analysis. Vocabulary and language study will be embedded within the analysis of literature. Students will maintain continued focus on communication skills, both in oral and written form, with public speaking and various forms of written compositions. College-level literature and materials are included in this course.

E176 Creative Writing I
Grades 10, 11 and 12 - Year - 1 Credit
This course allows students to explore the process of writing in a workshop setting. Students will write, share, critique, and attempt to publish a wide variety of genres with a focus on poetry, fiction, memoir, and drama. One goal of the course is to expose students to types of writing not typically taught in the English or Journalism classroom. As participants in writing workshop, students will explore the craft of writing through several stages, including prewriting, drafting, revision, and editing. As a group, students will collaborate to critique and mentor each other as they grow as a community of writers. Through study of authors, students will examine models of good writing and discuss techniques they can use themselves. Students in creative writing may elect to contribute to the production of the literary magazine.

E178 Creative Writing II
Grades 11 and 12 - Year - 1 Credit
Prerequisite: Creative Writing I
Second year students will advance their creative writing skills in terms of form, length, and depth. They will further explore the process of writing and expand on

techniques related to the genres of fiction, nonfiction, poetry, and drama learned in level one. One goal of the second level course is to offer students the opportunity to explore a particular genre in depth—through author study, original composition and publication., Students will produce a body of work each marking period that reflects their knowledge of genre, their understanding of process, and their attention to craft. In addition to the projects, second year students will mentor first year students and participate in peer response groups. They may also elect to take on leadership roles in the production of some literary magazines.

E182 (ESL I)
E183 (ESL II)
E184 (ESL III)
E185 (ESL IV)
E188 (ESL V)
ESL
Grades 9 - 12 - Year - 1 Credit
ESL instruction is intensive teaching in English especially designed for English Learner (EL) students, where English may be a second language. In order to assist pupils with the English language acquisition process, teachers bring ELs of diverse languages and cultures together in a classroom setting for whole-group instruction; in some instances the ESL teacher may pull students our of their classrooms individually for a certain period of time for one-on-one work in English language instruction. A primary goal of ESL is to help students understand, read, write, and speak English in order to communicate in social settings, to achieve academically in all subject areas, and to behave in socially and culturally appropriate ways. In order to realize these goals, EL students require meaningful oral language practice. In addition, regular reinforcement of English skills in the home can be instrumental in helping a student become proficient in his/her new language. *Unless already identified with an IEP or 504 plan, English Language Learners should not be placed in collaborative classes.*

E196 Yearbook II
Grades 10, 11 and 12 - Year - 1 Credit
Prerequisite: Introduction to Mass Communications I (C189)
Second year students will handle leadership roles for the yearbook staff based upon ability and knowledge shown in the first year course. Students will be responsible for different sections of the yearbook and will aid in the training of the new staff members. Requirements for course credit will be outlined in a student contract to be signed by the student, teacher, and parent. Significant out-of-class responsibilities may be required.

E197 Yearbook III
Grades 11 and 12 - Year - 1 Credit
Prerequisite: Introduction to Mass Communications I (C189) and Yearbook II (E196)
The Yearbook III Journalism course is designed for students interested in working as editors and in leadership positions for production of the school yearbook. Students will work with digital processing, develop business management skills, extend editing skills, and develop a portfolio of writing and design. They will research careers and higher education in journalism and graphic design. Significant out-of-class responsibilities may be required.

E195 Newspaper II
Grades 10, 11 and 12 - Year - 1 Credit
Prerequisite: Introduction to Mass Communications I (C189)
Second year students will handle reporting roles for the newspaper staff based upon ability and knowledge shown in the first year course. Students will be responsible for different "beats" on the newspaper. Typing, computer skills, and/or knowledge of photography are recommended. Requirements for course credit will be outlined in a student contract to be signed by the student, teacher, and parent. Significant out-of-class responsibilities may be required.

E198 Newspaper III
Grades 11 and 12 - Year - 1 Credit
Prerequisite: Introduction to Mass Communications I (C189) and Newspaper II (E195)
Newspaper III Journalism students will assume editorial and other leadership roles on the school newspaper staff and will be responsible for producing the newspaper. Skills in desktop publishing, layout, design, digital photography, editing, and journalistic writing will be required and further developed in the course. Significant out-of-class responsibilities may be required.

E199 (Newspaper/IV)
E200 (Yearbook/IV)
Mass Communications IV
Grade 12 - Year - 1 Weighted Credit
Prerequisites: Mass Communications I (C189) plus Newspaper II and III (E195, E198) or Yearbook II and III (E196, E197) or Television Production II and III (C192, C193)
Mass Communications IV students will assume leadership roles such as section and managing editors or directors in newspaper, yearbook, or broadcasting, and will be responsible for production. Skills in publication layout or short film/documentary production, overseeing the work of others in a supportive and collaborative environment, and detail-oriented management will be required and further developed in this course. Significant out-of-class responsibilities may be required.

E751 English 9 Pre-Baccalaureate *
Grade 9 - Year - 1 Weighted Credit
Students will study world literature extensively to develop skills in recognizing themes and applying them to their own experiences. They will focus on communicating this knowledge in appropriate oral and written forms. In addition, students will enrich their knowledge of vocabulary to provide better communication and comprehension skills. Stylistic development in prose style as well as effective use of grammatical conventions will be emphasized in formal and informal essays. Students will learn effective techniques of oral presentation.

E757 English 10 Pre-Baccalaureate *
Grade 10 - Year - 1 Weighted Credit
Students will develop reading and listening proficiencies through interaction with a variety of literary genres and will demonstrate knowledge of the correct usage of language. Vocabulary study will be enhanced through literature study. Developing persuasive, expository, narrative, and descriptive writings will be addressed; however, the focus will be on developing expository writing, which asserts and supports a position. Developing proficiency in public speaking, analyzing consumer information, and writing a résumé also will be addressed in this course.

E800 English HL-A IB *
Grade 11 - Year - 1 Weighted Credit
(Year 1 of a Two-Year Course)
Note: This course requires summer reading.
Students study literature beyond simple literary elements. Students also produce various types of writing: expository, narrative, and persuasive. Students demonstrate proficiency in public speaking, composing letters of application, developing résumés, and documenting research papers. The course includes the study of literature in translation. One of the course's objectives is to help students recognize, analyze, and effectively discuss/write about the connections between style and theme, even more so than in English 11 Advanced. Also, IB requires students to engage in two oral presentations: I) students conduct independent literary research and present their findings to the class; 2) students discuss extemporaneously with the instructor a poem the class has studied. IB credit will be awarded at the conclusion of Year 2. The SOL assessments in English and Writing are required.

E801 English HL-B IB *
Grade 12 - Year - 1 Weighted Credit
(Year 2 of a Two-Year Course)
Prerequisite: English HL-A IB
Note: This course requires summer reading.
The course is primarily a pre-university course in literature. Students read various pieces of literature in translation with an emphasis on seeing literary works as products of art and their authors as craftsmen whose methods of production can be analyzed in a variety of ways and on a number of levels. English HL-B IB continues with the focus of English HL-A IB in helping students recognize and articulate connections between a writer's style and a work as a whole. IB requires students to write one written assignment that the school submits to IB for assessment. Students will take the IB examination in May which covers topics from Year 1 and Year 2.

EPF100 Economics and Personal Finance
Grades 10, 11 and 12 - Year - 1 Credit
This course is required for graduation with a Standard Diploma or Advanced Studies Diploma. The course will provide students a

firm foundation in economics and personal finance necessary to function as consumers, workers, savers, investors, entrepreneurs, and citizens. Students will develop knowledge and skills related to the following:

- Economic concepts and structures
- Market economy - producers and consumers
- Price system - supply and demand
- Human capital - income potential
- National and global economic goals and policies
- Governmental role in economics
- Banking - credit and loan functions
- Insurance and risk management
- Taxes
- Personal financial planning and management

This course is taught in a blended classroom combining face-to-face instruction with online modules. This course meets the online diploma requirement for graduation beginning with the ninth grade class of 2013-14.

EPF102 Economics and Personal Finance-Semester - 1/2 Credit
For concurrent enrollment with H875 Economics IB to meet the Virginia graduation requirement for Economics and Personal Finance.

F550 French I
Grades 9 - 12 - Year - 1 Credit
In this beginning level course, stdents will start their acquisition of the French language with the development of speaking and listening skills. Focus is given to creative speaking proficiency at a novice level. Students will have additional practice with reading and writing French as they explore geography, culture, and customs of the Francophone countries.

F551 French II
Grades 10 - 12 - Year - 1 Credit
Prerequisite: Successful completion of French I
This course continues to build on the speaking and listening skills established in French I. Focus is given to developing reading and writing in French along with continued use of the language in class. The functions on language will be expanded and increased communication in French is required in the classroom.

F552 French III
Grades 11 - 12 - Year - 1 Credit
Prerequisite: Successful completion of French II
The course continues to refine the four skills areas learned in French I and II: listening, speaking, reading, and writing. With much of the course conducted exclusively in French, students will learn and apply new grammatical structures to higher level vocabulary in order to further expand communication skills Primary focus in on speaking proficiency in non-scripted and unrehearsed settings.

F553 French IV
Grades 9 - 12 - Year - 1 Weighted Credit
Prerequisite: Successful completion of French III
With the course conducted solely in French, students will refine higher level grammatical structures and vocabulary in order to further expand proficiency in all four skill areas: listening, speaking, reading, and writing. Appropriate authentic texts in listening and reading are the primary focus of this upper level course.

F554 French V
Grades 10, 11 and 12 - Year - Weighted Course
Prerequisite: Successful completion of French IV
This French language and culture course gives students the opportunity to review, refine, apply, and advance the language skills that they have acquired in previous years. Students have studied most of the grammatical structures presented in this course and have a significant working vocabulary. Students will refine their knowledge and study the intricacies and nuances of the language and its cultures in great detail. Students are expected to use French at all times in the classroom. Some students may elect to take the AP exam in May.

F555 French VI
Grades 11 and 12 - Year - Weighted Course
Prerequisite: Successful completion of French V
This course continues the objectives of the upper level program, but with an added focus on the interactions between speakers and writers in French. Students will use the language appropriately in a range of advanced situations using authentic texts as a basis for class discussion conducted solely in French. Some students may elect to take the AP exam.

F560 German I
Grades 9 - 12 - Year - 1 Credit
In this beginning level course, students will start their acquisition of the German language with the development of speaking and listening skills. Focus is given to creative speaking proficiency at a novice level. Students will have additional practice with reading and writing German as they explore geography, culture, and customs of the German-speaking countries.

F561 German II
Grades 10, 11 and 12 - Year - 1 Credit
Prerequisite: Successful completion of German I
This course continues to build on the speaking and listening skills established in German I. Focus is given to developing reading and writing in German along with continued use of the language in class. The functions on language will be expanded and increased communication in German is required in the classroom.

F562 German III
Grades 11 and 12 - Year - 1 Credit
Prerequisite: Successful completion of German II
The course continues to refine the four skills areas learned in German I and II: listening, speaking, reading, and writing. With much of the course conducted exclusively in German, students will learn and apply new grammatical structures to higher level vocabulary in order to further expand communication skills Primary focus in on speaking proficiency in non-scripted and unrehearsed settings.

F563 German IV
Grades 9 - 12 - Year - 1 Weighted Credit
Prerequisite: Successful completion of German III
With the course conducted solely in German, students will refine higher level grammatical structures and vocabulary in order to further expand proficiency in all four skill areas: listening, speaking, reading, and writing. Appropriate authentic texts in listening and reading are the primary focus of this upper level course

F564 German V
Grades 10, 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Successful completion of German IV
This German language and culture course give students the opportunity to review, refine, apply, and advance the language skills that they have acquired in previous years. Students have studied most of the grammatical structures presented in this course and have a significant working vocabulary. Students will refine their knowledge and study the intricacies and nuances of the language and its cultures in great detail. Students are expected to use German at all times in the classroom. Some students may elect to take the AP exam in May.

F565 German VI
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Successful completion of German V
This course continues the objectives of the upper level program, but with an added focus on the interactions between speakers and writers in German. Students will use the language appropriately in a range of advanced situations using authentic texts as a basis for class discussion conducted solely in German. Some students may elect to take the AP exam.

F570 Latin I
Grades 9 - 12 - Year - 1 Credit
In this beginning level course, students will develop a working knowledge of the Latin language and its appreciation for the Roman culture. Primary focus is given to vocabulary, grammar, and derivative study, reading, culture, and mythology. The legendary history and monarchy of Rome are historical periods studied at this level.

F571 Latin II
Grades 10 - 12 - Year - 1 Credit
Prerequisite: Successful completion of Latin I
This course continues to build on the skills that students developed in Latin I. More emphasis is given to reading and comprehension of the written language than in the first year. The study of grammar is expanded and Republican history is covered.

F572 Latin III
Grades 11 - 12 -Year - 1 Credit
Prerequisite: Successful completion of Latin II
Students begin the course with an intensive review of grammar studied during the first two years. Most of the remaining grammatical and syntactical topics are introduced throughout the year, as are vocabulary, derivative studies and cultural topics associated with the readings used at this level. The period of the empire is emphasized as the study of Roman history continues.

F573 Latin IV
Grades 9, 10, 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Successful completion of Latin III
Students begin the course with an intensive review of grammar studied during the first three years. Second semester, students begin their study of the literary works of Ovid. Mythological and historical references in the original works read will be emphasized. Vocabulary specific to the authors being read will be studied. Some students at this level may work with the instructor to prepare for the International Baccalaureate exam.

F574 Latin V
Grades 10, 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Successful completion of Latin IV
Students will concentrate on the study of Latin poetry with an emphasis on the works of Ovid/Catullus, Horace/Catullus, or Vergil. The AP and IB syllabi for the author(s) being read will be followed.

F575 Latin VI
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Successful completion of Latin V
Students will continue the study of Latin poetry and will study those authors on the AP/IB syllabi not studied at level V. The AP and IB syllabi for the selected author(s) will be followed. Some students may elect to take the IB exam in May. This course is taught at an accelerated pace.

F590 Spanish I
Grades 9 - 12 - Year - 1 Credit
In this beginning level course, students will start their acquisition of the Spanish language with the development of speaking and listening skills. Focus is given to creative speaking proficiency at a novice level. Students will have additional practice with reading and writing Spanish as they explore geography, culture, and customs of the Spanish-speaking countries.

F591 Spanish II
Grades 10 - 12 - Year - 1 Credit
Prerequisite: Successful completion of Spanish I
This course continues to build on the speaking and listening skills established in Spanish I. Focus is given to developing reading and writing in Spanish along with continued use of the language in class. The functions on language will be expanded and increased communication in Spanish is required in the classroom.

F592 Spanish III
Grades 9 and 10 - Year - 1 Credit
Prerequisite: Successful completion of Spanish II
The course continues to refine the four skills areas learned in Spanish I and II: listening, speaking, reading, and writing. With much of the course conducted exclusively in Spanish, students will learn and apply new grammatical structures to higher level vocabulary in order to further expand communication skills Primary focus in on speaking proficiency in non-scripted and unrehearsed settings.

F593 Spanish IV
Grades 9, 10, 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Successful completion of Spanish III
With the course conducted solely in Spanish, students will refine higher level grammatical structures and vocabulary in order to further expand proficiency in all four skill areas: listening, speaking, reading, and writing. Appropriate authentic texts in listening and reading are the primary focus of this upper level course

F594 Spanish V
Grades 10, 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Successful completion of Spanish IV
This Spanish language and culture course give students the opportunity to review, refine, apply, and advance the language skills that they have acquired in previous years. Students have studied most of the grammatical structures presented in this course and have a significant working vocabulary. Students will refine their knowledge and study the intricacies and nuances of the language and its cultures in great detail. Students are expected to use Spanish at all times in the classroom. Some students may elect to take the AP exam in May.

F595 Spanish VI
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Successful completion of Spanish V
This course continues the objectives of the upper level program, but with an added focus on the interactions between speakers and writers in Spanish. Students will use the language appropriately in a range of advanced situations using authentic texts as a basis for class discussion conducted solely in Spanish. Some students may elect to take the AP exam in May.

F793 Spanish IV Pre-Baccalaureate
Grades 9, 10 and 11 - Year - 1 Weighted Credit
Prerequisite: Successful completion of Spanish III
Students continue to refine the skills learned in the first three years to become more proficient in all aspects of the language. Students are introduced to literary selections. Spanish history and culture are studied in more depth. Increased emphasis is placed on all skill areas—listening, speaking, reading, and writing. Spanish is used exclusively from the beginning of the year to communicate in the classroom. This course is taught at an accelerated pace.

F805 Spanish SL-A IB
Grades 11 and 12 - Year - 1 Weighted Credit
(Year 1 of a 2-Year Course)
Prerequisite: Spanish IV
The course focuses on preparing students to express themselves accurately and effectively in a variety of contexts. Primary focus is to develop students' skills in listening, speaking, reading, and writing to a near-native fluency. The course emphasizes communication through the study of a range of written and oral texts, such as short stories and newspaper articles Functions of language (grammar and vocabulary) are enhanced through the study of themes and authentic texts. The course is conducted solely in the target language.

F806 Spanish SL-B IB
Grades 11 and 12- Year - 1 Weighted Credit
(Year 2 of a 2-Year Course)
Prerequisite: Spanish SL-A IB or Spanish V
The course continues to prepare students to express themselves accurately and effectively in a variety of contexts. Continued and enhanced focus further refines students' skills in listening, speaking, reading, and writing to a near-native fluency. The course strengthens the communication skills through the study of a wide range of written and oral texts, such as short stories, newspaper articles, and radio broadcasts in Spanish. Functions of language (grammar and vocabulary) are enhanced and refined through the study of themes and authentic texts. The course is conducted solely in the target language. Students will take the IB exam in May which covers topics from IB-A and IB-B.

F808 German SL-A IB
Grades 11 and 12- Year - 1 Weighted Credit
(Year 1 of a 2-Year Course)
Prerequisite: German IV
The course focuses on preparing students to express themselves accurately and effectively in a variety of contexts. Primary focus is to develop students' skills in listening, speaking, reading, and writing to a near-native fluency. The course emphasizes communication through the study of a range of written and oral texts, such as short stories and newspaper articles Functions of language (grammar and vocabulary) are enhanced through the study of themes and authentic texts. The course is conducted solely in the target language.

F809 German SL-B IB
Grades 11 and 12 - Year - 1 Weighted Credit
(Year 2 of a 2-Year Course) Prerequisite: German SL-A IB or German V
The course contines to prepare students to express themselves accurately and effectively in a variety of contexts. Continued and enhanced focus further refines students' skills

in listening, speaking, reading, and writing to a near-native fluency. The course strengthens the communication skills through the study of a wide range of written and oral texts, such as short stories, newspaper articles, and radio broadcasts in German. Functions of language (grammar and vocabulary) are enhanced and refined through the study of themes and authentic texts. The course is conducted solely in the target language. Students will take the IB exam in May which covers topics from IB-A and IB-B.

F811 French SL-A IB
Grades 11 and 12 - Year - 1 Weighted Credit
(Year 1 of a 2-Year Course) Prerequisite: French IV
The course focuses on preparing students to express themselves accurately and effectively in a variety of contexts. Primary focus is to develop students' skills in listening, speaking, reading, and writing to a near-native fluency. The course emphasizes communication through the study of a range of written and oral texts, such as short stories and newspaper articles Functions of language (grammar and vocabulary) are enhanced through the study of themes and authentic texts. The course is conducted solely in the target language.

F812 Latin SL-A IB
Grades 11 and 12 - Year - 1 Weighted Credit
(Year 1 of a 2-Year Course)
Prerequisite: Latin IV
The aim of this course is to equip students with the language skills necessary to read with understanding Latin authors in the original language. Students will enrich their knowledge of classical civilization, history, and geography through analysis and discussion of various authors' works. IB credit will be awarded at the conclusion of Year 2.

F813 Latin SL-B IB
Grades 11 and 12 - Year - 1 Weighted Credit
(Year 2 of a 2-Year Course)
Prerequisite: Latin SL-A IB or Latin V
The aim of this course is to equip students with the language skills necessary to read with understanding Latin authors in the original language. Students will take the IB examination in May which covers topics from Year 1 and Year 2.

F814 French SL-B IB
Grades 11 and 12- Year - 1 Weighted Credit
(*Year 2 of a 2-Year Course)*
Prerequisite: French SL-A IB or French V
The course continues to prepare students to express themselves accurately and effectively in a variety of contexts. Continued and enhanced focus further refines students' skills in listening, speaking, reading, and writing to a near-native fluency. The course strengthens the communication skills through the study of a wide range of written and oral texts, such as short stories, newspaper articles, and radio broadcasts in French. Functions of language (grammar and vocabulary) are enhanced and refined through the study of themes and authentic texts. The course is conducted solely in the target language. Students will take the IB exam in May which covers topics from IB-A and IB-B.

FA01 Art I
Grades 9, 10, 11 and 12 - Year - 1 Credit
This is an introductory course with an emphasis on the elements and principles of design. Drawing is stressed in the preparation for each project in this survey course. Composition, design, ceramics, sculpture, and printmaking techniques as well as historical and contemporary art will be included.

FA02 Art II
Grades 10, 11 and 12 - Year - 1 Credit
Prerequisite: Art I
Students enrolled in this course concentrate on drawing, painting, design, and color in composition. Art history is integrated within each unit of study. A knowledge of craftsmanship and characteristics of various media is stressed in order to expand visual expression.

FA03 Art III
Grades 11 and 12 - Year - 1 Credit
Prerequisite: Art II
The student's knowledge of design and self expression is further expanded. Mixed media will be explored along with communication arts and design in order to develop personal statements. Two-dimensional and three-dimensional techniques will be studied with an emphasis placed on portfolio assessment. Computer technology may be used in some units of study.

FA04 Art IV
Grade 12 - Year - 1 Credit
Prerequisite: Art III
Students will explore advanced problem solving techniques in fine and commercial art. The exploration of a variety of media will be stressed as students prepare portfolios for senior exhibits or advanced studies after graduation. The computer may be employed to extend artists' experiences, and some units may be developed to provide differentiation or independent study for students with unique needs.

FA06 Crafts II
Grades 10, 11 and 12 - Year - 1 Credit
Prerequisite: Art I
This course emphasizes the principles of design and composition in the fine crafts. Students are required to draw and plan projects on paper before working with various materials such as fibers, clay, metals, wood, and glass. The history of craft design is also studied.

FA07 Crafts III
Grades 11 and 12 - Year - 1 Credit
Prerequisite: Crafts II
Originality and creativity are emphasized as students expand their skills in three-dimensional composition. A variety of craft materials will continue to be explored with an emphasis on utilitarian forms. Some units may be developed to provide differentiation or independent study for students with unique needs.

FA08 Crafts IV
Grades 12 - Year - 1 Credit
Prerequisite: Crafts III
Students will work with their instructor to plan advanced two- and three-dimensional craft products using a variety of materials. Students will develop a production contract for individualized studies. A senior exhibition is required.

FA09 Photography I
Grades 10, 11 and 12 - Year - 1 Credit
No previous experience is necessary in black and white photography and darkroom techniques. Students must have access to film and a manual 35mm camera (some cameras may be available) and must supply their own film and printing paper. This course is designed to acquaint students with various methods of photography in order to produce creative and expressive compositions. Students will understand exposure, the 35mm film and camera, and black and white darkroom processes and film development. Photographic careers and history will be emphasized.

FA12 Art III ADV *
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Art II
The student's knowledge of design and self expression is further expanded. Mixed media will be explored along with communication arts and design in order to develop personal statements. Two-dimensional and three-dimensional techniques will be studied with an emphasis placed on portfolio assessment. Computer technology may be used in some units of study.

FA13 Art IV ADV *
Grade 12 - Year - 1 Weighted Credit
Prerequisite: Art III
Students will explore advanced problem solving techniques in fine and commercial art. The exploration of a variety of media will be stressed as students prepare portfolios for senior exhibits or advanced studies after graduation. The computer may be employed to extend artists' experiences, and some units may be developed to provide differentiation or independent study for students with unique needs.

FA14 Crafts III ADV *
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Crafts II
Originality and creativity are emphasized as students expand their skills in three-dimensional composition. A variety of craft materials will continue to be explored with an emphasis on utilitarian forms. Some units may be developed to provide differentiation or independent study for students with unique needs.

FA15 Crafts IV ADV *
Grades 12 - Year - 1 Weighted Credit
Prerequisite: Crafts III
Students will work with their instructor to plan advanced two- and three-dimensional craft products using a variety of materials.

Students will develop a production contract for individualized studies. A senior exhibition is required.

FA16 Photography II
Grades 11 and 12 - Year - 1 Credit
Prerequisite: Photography I
Photography II is designed as the second year in a sequentially developed photography curriculum. Students will develop skills and demonstrate learning in 35mm camera use and b/w film and print processing, photo journalism and documentation, digital photography and print processes, career studies, studio lighting, alternative print processes, and exhibitions.

FA20 Concert Choir
Grades 10, 11 and 12 - Year - 1 Credit
This course is designed for the student who has had previous choral music experience at school or in the community but will accept beginners. The students study various styles of music from different historical periods. School and community concerts are scheduled throughout the year. Much attention is paid to developing skills for individual performance and musicianship.

FA21 Mixed Show Choir (SATB)
Grades 9, 10, 11 and 12 - Year - 1 Credit
Prerequisite: Audition
This course is for the advanced choral music student, and a balance of vocal parts is a major consideration. The students will study and perform a wide variety of musical material from Renaissance Madrigal to contemporary pop literature. Innumerable performances are given throughout the year. A high degree of skill in musicianship and performance is required. Choreography is included in the class.

FA22 Beginning Choir
Grade 9 - Year - 1 Credit
This course is designed for the freshmen level students wishing to participate in a choral music ensemble. Emphasis will be placed on developing vocal skill and skills in musicianship. Performances will be scheduled throughout the year.

FA23 Men's Choir
Grades 9, 10, 11 and 12 - Year - 1 Credit
This course is designed for the student wishing to participate in a glee club type group. Emphasis will be placed on developing vocal and musicianship skills. A variety of music, appropriate to the developing male voice, will be studied. Performances will be scheduled throughout the year.

FA24 Treble Choir
Grades 10, 11 and 12 - Year - 1 Credit
This course is designed for girls wishing to be in an all treble voice ensemble. Emphasis will be placed on developing vocal skills and musicianship. A variety of treble literature will be studied. Performances will be scheduled throughout the year.

FA25 Girls' Show Choir
Grades 9, 10, 11 and 12 - Year - 1 Credit
Prerequisite: Audition
This course is designed for the advanced choral music student. It is designed for all female voices, and a balance of vocal parts is a major consideration. Students will study and perform a wide variety of music. Many performances are scheduled throughout the year. A high degree of skill in musicianship and performance is required. Choreography is included in the class.

FA26 Music Theory
Grades 10, 11 and 12 - Year - 1 Credit
Basic notation and the study of music theory are taught in this course. While this course is designed for beginners, some background in playing an instrument or singing in a choir is helpful. Students also will experience a wide range of music from all time periods.

FA27, FA30, FA31, FA32 Concert Band
Grades 9, 10, 11 and 12 - Year - 1 Credit
Prerequisites: Placement by audition and prior instrumental music experience
Students must furnish instrument although limited school owned instruments are available. Emphasis is placed on developing and improving the fundamentals of instrumental music technique. Notation, articulation, interpretation, and a variety of musical styles are studied. Required activities include concerts, music festivals, and additional musical performances as the need arises.

FA33 Symphonic Band
Grades 9, 10, 11 and 12 - Year - 1 Credit
Prerequisites: Placement by audition and prior instrumental music experience
Students must furnish instrument although limited school owned instruments are available. Emphasis is placed on developing and improving performance skills through the use of advanced band literature. Notation, articulation, interpretation, and a variety of musical styles are studied. Required activities of this advanced ensemble include concerts, music assessments, and additional musical performances as the need arises.

FA34 Jazz Ensemble
Grades 9, 10, 11 and 12 - Year - 1 Credit
Prerequisites: Placement by audition
Students must furnish instrument although limited school owned instruments are available. Jazz Ensemble specializes in big band, jazz, and pop music. Each player is selected by audition. The ensemble plays many times throughout the year for various civic organizations and in public concerts. Students must also participate in an additional musical ensemble. A background in music theory and a high degree of musicianship are required.

FA35 String Ensemble
Grades 9, 10, 11 and 12 - Year - 1 Credit
Prerequisite: Placement by audition
Students must furnish instrument although limited school owned instruments are available. Emphasis is placed on ensemble playing and progressive technical study. A variety of music literature is studied and performed.

FA36 Wind Ensemble
Grades 9, 10, 11 and 12 - Year - 1 Credit
Prerequisites: Placement by audition and prior instrumental music experience
Students must furnish instrument although limited school owned instruments are available. Emphasis is placed on developing and improving performance skills through the use of advanced band literature. Notation, articulation, interpretation, and a variety of musical styles are studied. Required activities of this advanced ensemble include concerts, music assessments, and additional musical performances as the need arises.

FA40 Theater Arts: Introduction to Theater
Grades 9, 10, 11 and 12 - Year - 1 Credit
The standards for Theater Arts I enable students to survey theater arts, experience and appreciate theatrical works and performances, and participate in the creative processes of producing and performing theater. The course emphasizes foundational concepts, ensemble work, and skill development and provides theatrical opportunities for students to determine areas of personal interest.

FA41 Theater Arts: Dramatic Literature and Theater History
Grades 10, 11 and 12 - Year - 1 Credit
Prerequisite: Theater Arts I
Prerequisites: Written test, portfolio/audition, written contract upon acceptance.
The standards for Theater Arts II help students make use of and build upon the concepts learned and skills acquired in Theater Arts I. Students will continue to participate in the production and performance aspects of theater while also investigating dramatic literature, theatrical styles, and historical periods. They study and respond to a variety of theatrical experiences that refine their communicative, collaborative, analytical, interpretive and problem-solving skills. Students expand their artistic abilities and appreciation of theater arts.

FA42 String Orchestra
Grades 9, 10, 11 and 12 - Year - 1 Credit
Prerequisite: Placement by audition
Students must furnish instrument although limited school owned instruments are available. Emphasis is placed on ensemble playing and progressive technical study. A variety of music literature is studied and performed. A high degree of skill in musicianship and performance is required.

FA43 Music Theory AP
Grades 10, 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Placement test; or completion of FA26 with a grade of "B" or higher. (Sufficient enrollment required to offer this course.)
In this course students study advanced music theory. This includes an in-depth study of intervals, scales, keys, triads, chords, and their working relationship. A survey of

music history is incorporated. This course also provides the opportunity to study music through analysis and written composition. Students taking this course should have a background of playing an instrument or singing in an ensemble. This course is highly recommended for college bound music majors. Students are encouraged to take the Advanced Placement Examination administered by the College Board.

FA44 Jazz Ensemble ADV
Grades 9, 10, 11, and 12 - Year - 1 Weighted Credit
Prerequisites: Written test, audition, 2 years sequential secondary music with a 3.0 or higher (ex. Grades 7 & 8), written contract upon acceptance
Students must furnish instrument although limited school owned instruments are available. Jazz Ensemble specializes in big band, jazz, and pop music. Each player is selected by audition. The ensemble plays many times throughout the year for various civic organizations and in public concerts. Students must also participate in an additional musical ensemble. A background in music theory and a high degree of musicianship are required.

FA45 Mixed Show Choir (SATB) ADV
Grades 9, 10, 11 and 12 - Year - 1 Weighted Credit
Prerequisites: Written test, audition, 2 years sequential secondary music with a 3.0 or higher (ex. Grades 7 & 8), written contract upon acceptance
This course is for the advanced choral music student, and a balance of vocal parts is a major consideration. The students will study and perform a wide variety of musical material from Renaissance Madrigal to contemporary pop literature. Innumerable performances are given throughout the year. A high degree of skill in musicianship and performance is required. Choreography is included in the class.

FA46 String Orchestra ADV
Grades 9, 10, 11 and 12 - Year - 1 Weighted Credit
Prerequisites: Written test, audition, 2 years sequential secondary music with a 3.0 or higher (ex. Grades 7 & 8); written contract upon acceptance
Students must furnish instrument although limited school owned instruments are available. Emphasis is placed on ensemble playing and progressive technical study. A variety of music literature is studied and performed. A high degree of skill in musicianship and performance is required.

FA47 Girls' Show Choir ADV
Grades 9, 10, 11 and 12 - Year - 1 Weighted Credit
Prerequisites: Written test, audition, 2 years sequential secondary music with a 3.0 or higher (ex. Grades 7 & 8); written contract upon acceptance
This course is designed for the advanced choral music student. It is designed for all female voices, and a balance of vocal parts is a major consideration. Students will study and perform a wide variety of music. Many performances are scheduled throughout the year. A high degree of skill in musicianship and performance is required. Choreography is included in the class.

FA48 Wind Ensemble ADV
Grades 9, 10, 11 and 12 - Year - 1 Weighted Credit
Prerequisites: Written test, audition, 2 years sequential secondary music with a 3.0 or higher (ex. Grades 7 & 8); written contract upon acceptance
Students must furnish instrument although limited school owned instruments are available. Emphasis is placed on developing and improving performance skills through the use of advanced band literature. Notation, articulation, interpretation, and a variety of musical styles are studied. Required activities of this advanced ensemble include concerts, music assessments, and additional musical performances as the need arises.

FA49 Theater Arts: Advanced Acting and Directing
Grades 10, 11 and 12 - Year - 1 Weighted Credit
Prerequisites: Theater Arts I and written test, portfolio/audition, written contract upon acceptance.
The standards for Theater Arts III: Acting and Directing help students reinforce the principles learned in Theater Arts I and II. Through research, performance and evaluation, students develop artistic criteria that are applied to performing and directing. They study and respond to a variety of theatrical experiences, showcasing and applying their collaborative, analytical, interpretive and problem-solving skills.

FA50 Chamber Vocal Ensemble ADV
Grades 9, 10, 11 and 12 - Year - 1 Weighted Credit
Prerequisites: Audition and recommendation from music teacher
This course is a small vocal ensemble for the advanced choral music student. The class will usually number 20-25 students and a balance of vocal parts is a major consideration. Students will study and perform a variety of music from all time periods. The ability to sight-sing and a high degree of musicianship is required. Numerous performances will be given throughout the year. Choreography is not a component of this class. College level music is studied and performed.

FA60 2D Design AP
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite: C195 or FA16 depending on track
This course fosters rigorous study of two-dimensional design as the formal framework for creative and systematic investigation of conceptual issues. Students will engage in artistic investigation and production based on an increasingly self-determined direction. Students will develop a culminating portfolio for external examination containing three sections: concentration (sustained investigation), breadth (range of approaches), and quality (selected works).

FA830 Visual Arts SL IB *
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Fine Art I and II
This course aims to provide students with the opportunities to develop aesthetic, imaginative, and creative faculties. Studies of various cultures will be included to enable the student to discover, develop, and understand creative visual expression in the studio, community, and general environment. Students will assemble a process portfolio as a personal record. The study of art and the various themes and motifs found in the work of diverse cultures will be emphasized. The visual arts journal will contain both visual and written information, critiques, and drawn responses to specific research. Students will be expected to produce personal works of art, exhibit their art, and articulate the intent of each work. Practice in the use of a variety of media will be stressed. The quality of work produced in this year course must demonstrate an understanding of theory and practice. Students will be expected to work toward a final exhibition and review by an external examiner.

FA831 Visual Arts HL-A IB *
Grade 11 - Year - 1 Weighted Credit
(Year 1 of a Two-Year Course)
Prerequisite: Art I and II
This course aims to provide highly committed students a structure for practicing their creative talents using a variety of media within a studio setting that fosters reading, research, and a strong analytical approach to developing art. Visual Art HL intends to enable students to discover, develop, and understand creative expression in diverse cultures while relating art to social and historical influences. Students are expected to explore art history and will be encouraged to develop personal themes in their own work in an effort to produce high quality work with highly developed content. Discussions and critiques of studio work will be expected on a regular basis so that students can readily articulate their artistic problems, solutions, influences, themes, and techniques. Students will assemble a process portfolio as a personal record of their artistic research. The visual arts journal will include both written material and sketches related to personal themes and plan drawings. Students will be expected to select significant works for exhibition which demonstrate growth and proficiency.

FA832 Visual Arts HL-B IB *
Grade 12 - Year - 1 Weighted Credit
(Year 2 of a Two-Year Course)
Prerequisite: Visual Arts HL-A IB
This course expands upon the experiences of students in Visual Art HL-A IB and prepares them for their final IB Visual Art HL examination. Students are expected to use their study of art and experiences in the studio to develop conceptual content in products and process portfolios. In order to be successful in this class, a high level of commitment is necessary as well as a desire

to independently explore galleries, museums, and artistic processes. The studio work will include a quantity of significant pieces that result from thoughtful and individual investigations. The student will demonstrate the ability to solve technical problems, design problems, and select media that supports the expressive qualities in their art. Students will explore ideas and maintain a body of work that clearly indicates rigorous investigations and understanding of global influences on the visual arts, the development of themes, the creation of creative images, and competence in handling materials. The visual arts journal will contain both visual and written content. A strong connection between research and studio production will be evidenced through work that integrates content and the development of visual ideas. The presentation of work will be emphasized. Each student will develop a personal artistic statement. Students will work toward a final exhibition and review by an external examiner.

FA840 Film SL-A IB *
Grade 11 - Year - 1 Weighted Credit
This course explores film history and theory. It will develop students' critical abilities enabling them to appreciate cultural and historical perspectives in film. To achieve an understanding of internationalism within the world of film, students will be taught to consider film texts, theories, and ideas from the points of view of different individuals, nations, and cultures. Students will be guided in their search for understanding through experiencing a wide range of different film texts. The aims are an appreciation and understanding of film as a complex art form; an ability to formulate stories and ideas in film terms; the practical and technical skills of production; critical evaluation of film productions; and knowledge of film-making traditions in more than one country.

FA841 Film SL-B IB *
Grade 12 - Year - 1 Weighted Credit
Prerequisite: Film SL-A IB
This second year of IB Film SL will continue the aims described in the description of Film SL-A IB, and students will have an opportunity to develop skills in film production. This process will require creative and analytical skills, as well as meticulous organization and close collaboration with other students. Students will gradually move from creative exercises to more substantial projects. Students will learn the overall structure of film-making, the nature of relationships in a production team, and the need for discipline and protocol on a set or location. Through film production and analytical assignments, students will demonstrate proficiency.

FA842 Film HL-A IB *
Grade 11 - Year - 1 Weighted Credit
This course explores film history and theory. It will develop students' critical abilities enabling them to appreciate cultural and historical perspectives in film. To achieve an understanding of internationalism within the world of film, students will be taught to consider film texts, theories, and ideas from the points of view of different individuals, nations, and cultures. Students will be guided in their search for understanding through experiencing a wide range of different film texts. The aims are: an appreciation and understanding of film as a complex art form; an ability to formulate stories and ideas in film terms; the practical and technical skills of production; critical evaluation of film productions; and knowledge of film-making traditions in more than one country. Students will work towards completing the requirements of the higher-level (HL) curriculum which will be finished in the second year of the course.

FA843 Film HL-B IB *
Grade 12 - Year - 1 Weighted Credit
Prerequisite: Film HL-A IB
This second year of IB Film HL will continue the aims described in the description of Film HL-A IB, and students will have an opportunity to develop skills in film production. This process will require creative and analytical skills, as well as meticulous organization and close collaboration with other students. Students will gradually move from creative exercises to more substantial projects. Students will learn the overall structure of film-making, the nature of relationships in a production team, and the need for discipline and protocol on a set or location. Through film production and analytical assignments, students will demonstrate proficiency. These assignments are similar to those completed in IB Film SL-B, but they have extended time or page requirements.

FA850 Music IB *
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Prior two years sequential study AND current enrollment in a performance ensemble.
To be successful in this course, the student must have music theory skills equivalent to those acquired upon completion of Music Theory Appreciation (FA26). The objectives of this course are the development of: 1) students' performance skills through playing solos; 2) students' compositional skills through exploration and investigation of musical elements; 3) students' uses of appropriate musical language and terminology to describe and reflect critical understanding of music; 4) students' perceptual skills in response to music; and 5) students' knowledge and understanding of music in relation to time and place. To fulfill these objectives, students study at least one prescribed IB work, plus musical genres and styles. Students also conduct a musical investigation. IB requires students to produce one or more of the following options: a solo performance, a group performance, and/or an analysis of musical perception. Students will take the IB examination in May to demonstrate proficiency.

GS9-12 Governor's School for Government and International Studies
Grades 9, 10, 11 and 12
The mission of the Governor's School for Government and International Studies is to provide broad based educational opportunities that develop gifted students' understanding of world cultures and languages as well as the ability to lead, participate, and contribute in a rapidly changing global society. The school serves students selected on the basis of aptitude and interest. Students must apply during their eighth grade year.

H457 United States History AP *
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite: World History I or II or Modern Global Studies
This course surveys the major events, personalities, and periods of American History. Emphasis is on the concepts and trends of historical development. Critical thinking skills, historical analysis, and research are used throughout the class. Students are encouraged to take the Advanced Placement Examination administered by the College Board and may receive college credit for satisfactory scores. Students will take the Virginia and U.S. History End-of-Course SOL test.

H459 Virginia and U.S. History
Grades 11 and 12 - Year - 1 Credit
The development of American ideas and institutions from the age of exploration to the present is studied in this class. People, characteristics of periods, and major events are included from a social, cultural, economic, and political approach. Primary and secondary sources are used to develop and support historical thinking skills. Students will take the Virginia and U.S. History End-of-Course SOL test.

H460 Virginia and U.S. History ADV *
Grades 11 and 12 - Year - 1 Weighted Credit
This course is a survey course designed to give students a critical perspective on the development of American ideas and institutions from the age of exploration to the present. Students will study people, characteristics of periods, and major events from social, cultural, economic, and political perspectives. Analysis and evaluation of issues, actions, and cause/effect relationships are emphasized, and significant requirements include research and using primary sources in document based questioning (DBQ). Students will take the Virginia and U.S. History End-of-Course SOL test.

H466 Virginia and U.S. Government ADV *
Grade 12 - Year - 1 Weighted Credit
This course examines the structure of government at the local, state, and national level, democratic values, politics, laws and court cases, and concepts within the American economic system in the United States. Students are expected to interpret and analyze events, case studies, and significant documents. Critical thinking skills, analysis of primary sources, interpretation of data, and research are emphasized.

H467 U.S. Government and Politics AP *
Grade 12 - Year - 1 Weighted Credit
Prerequisite: World History I and II, or Modern Global Studies, or Virginia and U.S. History
This course is designed to give students a critical perspective on government and politics in the United States and involves the study of general concepts used to interpret American politics and the analysis of specific case studies. Critical thinking skills, analysis of documents, interpretation of data, and research are emphasized throughout the class. Students are encouraged to take the Advanced Placement Examination administered by the College Board and may receive college credit for satisfactory scores.

H468 Virginia and U.S. Government
Grades 11 and 12 - Year - 1 Credit
This course examines the basic structures of government at the local, state, national, and international levels. Democratic values, participatory citizenship, and the free enterprise system are stressed. One of the main functions of the course is to prepare students for active citizenship.

H470 Modern Global Studies
Grades 9, 10, 11 and 12 - Year - 1 Credit
Modern Global Studies is a world geography course involving a study of people, places, and environments, using data analysis within the five themes of geography. The knowledge, skills, and perspectives of the course center on locating and analyzing historical, physical, economic, and cultural characteristics of world regions. Landforms and climates, economic development, migration and settlement patterns, and forces of conflict and cooperation will be investigated. Students will employ skills of inquiry and research to acquire a global perspective of the world and an understanding of the relationship between humans and environment relevant to current events. Students will take the World Geography End-of-Course SOL test.

H471 Modern Global Studies ADV *
Grades 9, 10, 11 and 12 - Year - 1 Weighted Credit
Modern Global Studies Advanced is a world geography course involving a study of people, places and environments, using data analysis within the five themes of geography. The knowledge, skills, and perspectives of the course focus on locating and analyzing historical, physical, economic and cultural characteristics of world regions. Research and interpretation, analysis, and evaluation of data are significant requirements as students investigate how humans interact with each other and the environment. Students explore how past trends in history affect present day issues and make connections among physical, ecological, political, and economic information relating to our global society. Students will take the World Geography End-of-Course SOL test.

H473 Current Affairs
Grades 10, 11 and 12 - Semester - 1/2 Credit
An in-depth study of topics in the news is the focus of the Current Affairs semester. News magazines are used as the textbook, and the topics pursued include law, economics, international relations, politics, and personalities who are considered to be leaders in their field. *NOTE: Student should pair this course with another semester course.*

H474 Sociology
Grades 9, 10, 11 and 12 - Semester - 1/2 Credit
The course is designed to acquaint students with man and his society and the problems of society. Some of the topics included are: marriage and the family, crime and race relations. *NOTE: Student should pair this course with another semester course.*

H477 Psychology I
Grades 10, 11 and 12 - Year - 1 Credit
This introductory course in psychology includes the study of both human and animal behavior. The major topics include personality, behavior, intelligence, emotional behavior, and group behavior. One of the main objectives of this class is to help the student understand self.

H478 Psychology AP *
Grades 10, 11 and 12 - Year - 1 Weighted Credit
The content of this course contains a variety of units including abnormal psychology, experimental psychology, developmental psychology, and social psychology. This course is designed for the student who has a highly developed interest in the field of psychology. Students are encouraged to take the Advanced Placement Examination administered by the College Board and may receive college credit for satisfactory scores.

H480 European History AP *
Grades 10, 11 and 12 - Year - 1 Weighted Credit
Prerequisite: World History I or II
This course surveys the major events, personalities, and periods of European History from the late Middle Ages to the present. The emphasis in this class is on the concepts and trends of historical development. The course uses the AP syllabus which emphasizes critical thinking skills, analysis of documents, and research. Students are encouraged to take the Advanced Placement Examination administered by the College Board and may receive college credit for satisfactory scores.

H551 World History I
Grades 9 and 10 - Year - 1 Credit
The World History I course content focuses on an intensive chronological study of the world through the Renaissance. Students' understanding of the relationships among history, geography, economics, and civics in the development of the world will be emphasized. Using texts, documents, maps, globes, diagrams, and charts, students will develop historical and geographic comprehension of various cultures. The spatial concepts of geography are integrated with the chronological development of nations and peoples. Students will take the World History I End-of-Course SOL test.

H552 World History I ADV *
Grades 9 and 10 - Year - 1 Weighted Credit
World History I Advanced is a survey course which focuses on a chronological study of the world to 1500 A.D. (C.E.) An understanding of the relationships among history, geography, economics, and civics in the development of the world will be emphasized. Spatial concepts of geography will be connected to the chronological development of nations and peoples. Analysis and evaluation of issues, people, and the environment are emphasized for their connection to historical events. Research and analysis of data are significant requirements of the course. Students will take the World History I End-of-Course SOL test.

H553 World History II
Grades 9 and 10 - Year - 1 Credit
The World History II course content focuses on an intensive chronological study of the world since the 16th century. Students' understanding of the relationships among history, geography, economics and civics in the modern world will be emphasized. Using texts, documents, maps, diagrams, and charts, students will develop historical and geographic comprehension of various cultures. The spatial concepts of geography are integrated with the chronological development of nations and peoples. Students will take the World History II End-of-Course SOL test.

H554 World History II ADV *
Grades 9 and 10 - Year - 1 Weighted Credit
World History II Advanced is a study of the modern world since the 16th century. An understanding of the relationships among history, geography, economics, and civics in the development of the modern world will be emphasized. Spatial concepts of geography will be connected to the chronological development of nations and peoples. Analysis and evaluation of issues, people, and the environment are emphasized for their connection to historical events. Research and analysis of data are significant requirements of the course. Students will take the World History II End-of-Course SOL test.

H754 World History II Pre-Baccalaureate *
Grade 9
World History II Pre-Baccalaureate is a study of the modern world since the 16th century. An understanding of the relationships among history, geography, economics, and civics in the development of the modern world will be emphasized. Spatial concepts of geography will be connected to the chronological development of nations and peoples. Analysis and evaluation of issues, people, and the environment are emphasized for their connection to historical events. Research and analysis of data are significant requirements of the course. Students will take the World History II End-of-Course SOL test.

H766 Virginia and U.S. Government Pre-Baccalaureate *
Grade 10
This course examines the structure of government at the local, state, and national level, democratic values, politics, laws and court cases, and concepts within the American economic system in the United States. Students are expected to interpret and analyze events, case studies, and significant documents. Critical thinking skills, analysis of primary sources, interpretation of data, and research are emphasized.

H802 History of the Americas HL-A IB *
Grade 11 - Year - 1 Weighted Credit
(Year 1 of a Two-Year Course) This course is the first year of a two-year course that provides students the opportunity to acquire an in-depth understanding of the chronological development of people of the North, Central, and South Americas. Students examine political, economic, social, religious, military, scientific, and cultural events. Implicit in this curriculum is an understanding of the historical method, the inquiry process, historical reasoning, and interpretation of biases. The first year of History of the Americas focuses on U.S. history from Colonial America to World War II. IB requires students to conduct research on a historical investigation and present their findings in a written report of not more than 2,000 words. IB credit will be awarded at the conclusion of Year 2. The SOL assessment in U.S. History is required.

H803 History of the Americas HL-B IB *
Grade 12 - Year - 1 Weighted Credit
(Year 2 of a Two-Year Course)
Prerequisite: History of the Americas HL-A IB
This second year of History of Americas uses the same chronological approach to history and seeks to strengthen the skills emphasized in the first part; however, History of the Americas HL-B IB deals primarily with six options for 20th century topics from U.S. history and Latin America. Topics chosen for the Hanover County course include: 1) causes, practices, and effects of war; 2) the rise and rule of single-party states; and 3) the Cold War. Students will take the IB examination in May which covers topics from Year 1 and Year 2.

H813 Psychology SL IB *
Grades 11 and 12 - Year - 1 Weighted Credit
Psychology is the systematic study of human behavior and experience. Modern psychology is a meeting ground for the natural and social sciences. Psychologists employ rigorous procedures throughout research processes, using their findings for the possible improvement of life as well as for the understanding of the social conditions that affect individuals. Thus, students in this course will learn how to: 1) interpret and/or conduct psychological research; 2) apply ethical practices and responsibilities while conducting research; 3) develop an understanding of the biological, social, and cultural influences on human behavior; and 4) develop an understanding of different theoretical processes to interpreting behavior. IB requires students to submit the results of a simple experimental study in a paper of 1,000 to 1,500 words. Students will take the IB examination in May to demonstrate proficiency.

H815 Philosophy SL IB *
Grades 11 and 12 - Year - 1 Weighted Credit
This course explores the fundamental questions that people have asked since the beginning of time and confronts new problems arising within contemporary society. What exists? What is it to be a human being? What can we know? How do I know what is the right thing to do? The emphasis of the course is on philosophy, which requires intellectual rigor, an open and critical mind, and a willingness to attempt to understand alternative views. At the core of the course lies a concern with truth and clarity of understanding achieved through critical and systematic thinking, careful analysis of arguments, and close reading of several texts. IB requires students to produce at least two philosophical papers of 1,000 to 1,200 words each: a critical analysis of non-philosophical material and a philosophical dialogue. Students will take the IB examination in May to demonstrate proficiency.

H875 Economics SL IB *
Grades 11 and 12 - Year - 1 Weighted Credit
This course introduces microeconomics and macroeconomics in a modern day context and ultimately focuses on economic relationships and alternative economic systems. The curriculum will focus on the international aspect of economics and how countries are dealing with growth. Students are required to understand, analyze, and evaluate the organization of business, governmental institutions, private enterprise, and economic policies. Students are expected to take the IB exam at the completion of this course. To meet the Virginia graduation requirement for Economics and Personal Finance, the student must concurrently enroll in EPF102, Semester – 1/2 credit.

HN101E Electronics I - Electronics/Industrial Robotics Technology
Grades 9 - 12 - Year - 2 Weighted Credits
Prerequisite: Algebra I
Our ability to function and progress in the modern age is dependent on electronics and robotics technologies. This course provides a depth and breadth of the basic skills required in today's automated manufacturing environment. Students will explore careers, build circuits, and use principles of physics to analyze basic electronic and robotic components.

HN102E Electronics II: Electronics Technology
Grades 10 - 12 - Year - 2 Weighted Credits
Prerequisites: Electronics I
This course provides exposure to and in depth study of the advanced electronics technology skills that are required in today's automated manufacturing environment and are universally in demand within a culture that is increasingly dependent on electronics. Students construct AC and analog circuits while exploring digital logic systems. This course leads to industry certification options.

HN103E Electronics III: Industrial Robotics Technology
Grades 11 and 12 - Year - 2 Weighted Credits
Prerequisites: Electronics II
This course provides instruction in programming robots used in assembly and manufacturing settings. Students will work with various power systems while acquiring machining, welding, and system engineering skills. This course leads to industry certification options.

HN2000 Design, Multimedia, and Web Technologies
Grades 9 - 11- Year - 2 Weighted Credits
Students develop proficiency in designing and creating desktop-published projects, multimedia presentations/projects, and Web sites, using industry-standard application software. Students apply principles of layout and design in completing projects. Students work with sophisticated hardware and software, applying skills to real-world projects. Students create portfolios that include a résumé and a variety of desktop-published, multimedia, and Web-site projects produced in the course.

HN4010 Engineering Exploration
Grades 9 - 12 - Year - 2 Weighted Credits
Prerequisite: Algebra I
In Engineering Explorations I, students examine technology and engineering fundamentals in relation to solving real-world problems. Students investigate engineering history, including major engineering achievements, and they examine the principle engineering specialty fields and their related careers. Students practice engineering fundamentals, using mathematical and scientific concepts. This course will allow students to apply the engineering design process to areas of the designed world, explore ethics in a technological world, and examine systems in civil, mechanical, electrical, and chemical engineering. Students will participate in STEM-based, hands-on projects as they communicate information through team-based presentations, proposals, and technical reports.

HN4011 Engineering Concepts and Process and Studies
Grades 10 - 12 - Year - 2 Weighted Credits
Pre-requisite: Engineering Exploration
This is the second of the engineering sequence that will enable students to solve real-world problems. This course focuses on building an engineering team, working with case studies, managing projects, applying logic and problem-solving skills, delivering formal proposals and presentations, and examining product and process trends. In addition, students continue to apply their engineering skills to determine whether they are good candidates for postsecondary educational opportunities in engineering. Students will participate in STEM-based, hands-on projects as they communicate information through team-based presentations, proposals, and technical reports. Designed for students who intend to pursue engineering studies in college.

This course emphasizes integration of mathematics, science, and English concepts and skills into engineering problems in a curriculum demanding rigorous study habits and other college-level skills. Students are encouraged to become routinely inquisitive through brainstorming and prototyping. Students practice basic engineering skills and communication of technical information while applying the engineering design process to complete an engineering project

HN5000 Public Safety
Grades 11 and 12 - Year - 2 Credits
Students perform procedures related to law enforcement and firefighting occupations, including learning the history of the criminal justice system; policing skills; the rule of law; crime scene investigation; the role of the courts; communications systems; first aid and CPR techniques; protective devices (e.g. sprinklers); the history and fundamentals of the fire service; rescue procedures; and procedures for using personal protective equipment (PPE), the self-contained breathing apparatus (SCBA), water supply, hoses, and nozzles.

HN5010 Criminal Justice I
Grades 11 and 12- Year - 2 Credits
Students are introduced to the rule of law and will explore policing techniques, as well as how to investigate a crime scene. Additionally, students will explore courts and various careers in the criminal justice system, including law enforcement, forensic scientist, security and legal. Students combine classroom instruction and supervised, practical experience throughout the school year.

HN5011 Criminal Justice II
Grade 12 - Year - 2 Credits
Prerequisite: Criminal Justice I
Students delve further into their understanding of the legal system and policing techniques, including crime scene investigations. Students will also explore corrections, as well as the history of terrorism in the United States. Students combine classroom instruction and supervised, practical experience throughout the year.

PHARMACY TECHNICIAN CERTIFICATE PROGRAM COURSES:

HN910 Pharmacy Technician I
Grade 11 and/or 12 - Year - 2 Weighted Credits
Dual enrollment through RCC
This certificate program is designed to provide students with the basic skills and knowledge to begin work as a pharmacy technician. The coursework will fulfill the requirements of the Board of Pharmacy and prepare students to take 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 postsecondary study in the pharmacy field.

HN912 Pharmacy Technician II
Grade 11 and/or 12 - Year - 2 Weighted Credits
Dual enrollment through RCC
This certificate program is designed to provide students with the basic skills and knowledge to begin work as a pharmacy technician. The coursework will fulfill the requirements of the Board of Pharmacy and prepare 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 postsecondary study in the pharmacy field.

NURSE AIDE PROGRAM COURSES:

Admission Criteria: Due to the Virginia State Board of Nursing Clinical regulations a maximum of 30 students can be accepted into the program. Students who express an interest with their school counselor will be admitted as long as they are in good academic standing. If more than 30 students apply, it will be up to the administrators and directors of the program to resolve the issue by selecting candidates who are considered in the best academic standing at the time of admission.

HN9300 Nurse Aide
Grades 11 and 12 - 2 Credits
Emphasizes the study of nursing occupations as related to the health care system. Students study normal growth and development, simple body structure and function, medical terminology, etc. They receive skill training in patient-nursing assistant relationships; taking and recording vital signs; cardiopulmonary resuscitation and bathing, feeding, dressing and transporting patients in hospitals and nursing homes.

HN9302 Patient Care Technician
Grade 12 - 2 Credits
Prerequisite: HN9300
An occupational preparation course that emphasizes the measuring of vital signs, collection samples, recording information on patient charts as well as preparing treatment rooms for examinations.

HS0105 Firefighting
Grades 11 and 12 - Year - 2 Credits
Firefighting is one of the most dangerous jobs in the world and, therefore, requires complete discipline and attention to achieving the academic and professional standards necessary to successfully fight live fires, address hazardous-materials incidents, and conduct search-and-rescue operations. Students will become familiar with the procedures, equipment, and technologies used by current fire departments. This course challenges students academically, mentally, and physically and meets the standards of National Fire Protection Association (NFPA) 1001-2013 leading to Firefighting I certification. *NOTE: Students must be at least 16 years old (40-1.79.1 Code of Virginia) by the first day of the course offering. Enrollment also requires parental consent. Additional requirements, including CPR, HAZMAT operations, and Mayday Awareness, are stipulated for those students seeking NFPA 1001-2013 Firefighter I certification.*

HS0111 Emergency Medical Technician -
Grades 11 and 12 - 2 Credits
Prerequisite: CPR certification at the Health Care Provider level.
The tasks for this course represent the National Emergency Medical Services Educational Standards. Students explore and apply the fundamentals of emergency medical services, anatomy, physiology, and medical terminology while demonstrating skills in assessing and managing patient care, including assessing the scene and understanding shock, resuscitation, and trauma. Supervised field experience outside of school hours is required. Successful completion of this course and instructor endorsement qualifies students to enroll in EMT II to complete the program sequence. Successful completion of the second course in the sequence will earn the student CTE completer status. Successful completion of all course requirements and instructor endorsement may lead to eligibility to take the Virginia State Psychomotor Exam and the National Registry EMT cognitive exam. Note: Students must be at least 16 years old prior to the first day of EMT instruction.

HS1000 Introduction to Health and Medical Sciences
Grade 9 - Year - 1 Credit
This course introduces the student to a variety of healthcare careers and develops basic skills required in all health and medical sciences. It is designed to help students understand the key elements of the U.S. healthcare system and to learn basic healthcare terminology, anatomy and physiology for each body system, pathologies, diagnostic and clinical procedures, therapeutic interventions, and the fundamentals of traumatic and medical emergency care. Throughout the course, instruction emphasizes safety, cleanliness, asepsis, professionalism, accountability, and efficiency within the healthcare environment. Students also begin gaining job-seeking skills for entry into the health and medical sciences field. In addition, instruction may include the basics of medical laboratory procedures, pharmacology fundamentals, biotechnology concepts, and communication skills essential for providing quality patient care.

HS1020 Medical Terminology
Grade 10 - Year - 1 Credit
Medical Terminology is designed to help students learn common medical terms essential for safe patient care. Topics are presented in logical order, beginning with each body system's anatomy and physiology

and progressing through pathology, laboratory tests and clinical procedures, therapeutic interventions, and pharmacology. Students learn concepts, terms, and abbreviations for each topic.

HS1300 Sports Medicine/Athletic Trainer I
Grade 11 - Year - 2 Credits
This course of studies provides students with the basic concepts and skill set required for an entry-level position as a sports medicine assistant. It introduces students to topics such as injury prevention, nutrition, first aid/CPR/AED, exercise physiology, and biomechanics. Students study basic human anatomy and physiology, medical terminology, legal and ethical issues in sports medicine, and career preparation. Course competencies have been constructed so as not to go beyond the professional scope of aide/assistant level. Mastery of the material in this course would provide students with a strong background should they wish to pursue certification in areas such as first aid, CPR, AED and/or personal trainer.

HS1301 Sports Medicine/Athletic Trainer II
Grade 12 - Year - 2 Credits
This course of studies provides students with the basic concepts and skill set required for an entry-level position as a sports medicine assistant. It introduces students to topics such as injury prevention, nutrition, first aid/CPR/AED, exercise physiology, and biomechanics. Students study basic human anatomy and physiology, medical terminology, legal and ethical issues in sports medicine, and career preparation. Course competencies have been constructed so as not to go beyond the professional scope of aide/assistant level. Mastery of the material in this course would provide students with a strong background should they wish to pursue certification in areas such as first aid, CPR, AED and/or personal trainer.

HSE162 Health Science English 11 ADV
Grade 11 - Year - 1 Weighted Credit
In Health Science English 11 ADV, students will demonstrate a knowledge and understanding of United States literature through the study of classic and contemporary American literature themes and characterizations reflective of history, culture and health sciences. Writing instruction will focus on persuasive, expository, narrative, and descriptive writing as well as letters of application, resumes, and a documented research paper on a health science related topic. In addition, with the goal of success in college and professional pursuits, students will demonstrate proficiency in delivering public speeches, composing letters of application, and developing resumes.

HSE163 Health Science English 11
Grade 11 - Year - 1 Credit
In Health Science English 11, students will demonstrate a knowledge and understanding of United States literature through the study of classic and contemporary American literature themes and characterizations reflective of history, culture and health sciences. Writing instruction will focus on persuasive, expository, narrative, and descriptive writing as well as letters of application, resumes, and a documented research paper on a health science related topic.

HSH470 Health Science Modern Global Studies – Standard
Grades 9 and 10 – Year – 1 Credit
Modern Global Studies is a world geographic course involving the study of people, places, and environments, using data analysis with the five themes of geography. The knowledge, skills, and perspectives of this course focus on locating and analyzing historical, physical, economic, and cultural characteristics of world regions. Landforms and climates, economic development, migration and settlement patterns, health conditions and disease, and forces of conflict and cooperation will be investigated. Students will employ skills of inquiry and research to acquire a global perspective of the world and understanding of the relationship between humans, medicine, and disease, and the environment relevant to current events. Students will take the World Geography End-of-Course SOL test.

HSH471 Health Science Modern Global Studies ADV
Grades 9 and 10 – Year – 1 Weighted Credit
Modern Global Studies is a world geographic course involving the study of people, places, and environments, using data analysis with the five themes of geography. The knowledge, skills, and perspectives of this course focus on locating and analyzing historical, physical, economic and cultural characteristics of world regions. Landforms and climates, economic development, migration and settlement patterns, health conditions, and disease, and forces of conflict and cooperation will be investigated. Research and interpretation, analysis, and evaluation of data are significant requirements as students investigate how humans interact with each other and the environment. Students explore how past trends in history and disease affect present day issues and make connections among physical, ecological, political, health and wellness, and economic information relating to our global society. Students will take the World Geography End-of-Course SOL test.

HSP651 Health Science Health & Physical Education
Grade 9 – Year – 1 Credit
Health Science Health and PE 9 promotes health literacy and physical activity to promote personal fitness and wellness. Areas of study include human anatomy, physiology, exercise science, and kinesiology needed to apply key movement concepts and principles to become physical literate individuals. Physical education strands included: motor skill development, anatomical basis of movement, fitness planning, social development, and the importance of energy balance and nutritional needs of the body.

HSS354 Health Science Biology ADV
Grade 9 – Year – 1 Weighted Credit
Health Science Biology ADV explores in depth, biological concepts and the scientific process focus on health science and human health care. Areas of study include the cell theory, genetics, metabolic processes, environmental adaptations, homeostatic mechanism, classification, evolution, introductory ecology, and biochemistry. The major investigative skills used by practicing biologists are stressed. Students are expected to be independent learners with good communication skills. Students are required to complete extensive laboratory work including an independent research project. Further, students are expected to use the scientific method to discover scientific principles.

HSS355 Health Science Biology
Grade 9 – Year - 1 Credit
Health Science Biology, the study of living things, is a laboratory course designed with a focus on health science. In this course, students are introduced to major biological concepts within the construct of scientific investigation. Emphasis is placed on cellular structures, processes, and organization, metabolism, growth and development, evolution, classification, genetics, and introductory ecology. Students are expected to use the scientific methods to discover principles and to submit written laboratory reports.

HSS361 Health Science Chemistry ADV
Grade 10 – Year – 1 Weighted Credit
Health Science Chemistry ADV, an inquiry based laboratory course, introduces students to modern chemical concepts with a focus on human biology. Major concepts include atomic structure and bonding, stoichiometry, oxidation-reduction, thermodynamics, equilibrium, and simple organic chemistry. Students are expected to use the scientific method to discover scientific principles. Further, students are required to submit written laboratory reports and short papers, and to design and conduct an independent research projects. The major skills used by practicing chemistry are emphasized.

HSS362 Health Science Chemistry
Grade 10 – Year – 1 Credit
Health Science Chemistry, an inquiry based laboratory course, introduces students to basic chemical concepts with a focus on human biology. Topics include chemical composition of matter, atomic structure, periodic table, chemical bonding, formulas, and equations, reacting quantities and acid base theory. Laboratory experiments are used to teach conceptual themes through process skills. Students are expected to use the scientific methods to discover scientific principles and to write laboratory reports.

HSS380 Biotechnology Foundations in Technology Education
Grade 11 – Year – 2 Credits
This course focuses on various techniques that are used to modify living organisms

or parts of organisms to improve plants and animals, and the development of microorganisms for specific purposes. Student activities range from bioprocessing and DNA analysis to medicine, biomechanical systems, and the environment. Students gain insight and understanding about biotechnology career fields.

HSS381 Bioengineering
Grade 12 – Year – 2 Credits
The Bioengineering course focuses on bioengineering applications in the fields of medicine, agriculture, information and communications, and manufacturing. Students investigate the foundations of bioengineering and explore the process of designing and producing a variety of bioengineered products. Using the engineering design process, students complete a bioengineering design projects such as designing an artificial limb or replacement organ or producing and testing electronic instruments or equipment used in biotechnology.

IT800 Information Technology for a Global Society SL IB
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Internet access and the ability to use standard Microsoft applications (i.e., MS Word, Access, Excel)
This course is the study of the impact of information technology on individuals and society. Students will explore the advantages and disadvantages of the use of digitized information at the local and global levels. ITGS provides a framework for the students to make informed judgments and decisions about the use of information technology (IT) within social contexts. In addition, ITGS will focus on the ethical questions resulting from the widespread use of IT today. Students will be expected to critically examine the global impact of IT developments and demonstrate an understanding of the social and ethical implications of IT systems. Through a project, students will design and apply IT solutions to a problem set. Students will take the IB examination in May to demonstrate proficiency.

IT812 Design Technology SL IB
Grades 11 and 12 - Year - 1 Weighted Credit
Students will use the design cycle and discuss the class review of materials and manufacturing processes to define a problem and to develop a solution. The design cycle is at the core of this class and is central to the student's own investigative work and project design. Each element of the design cycle represents an aspect of design technology, which when viewed together emphasize how to exercise judgment and responsibility in the use of technology, how to recognize needs and how to produce the optimum solution. This class assumes no previous experience in design or technology. Students will take the IB examination in May to demonstrate proficiency.

M252 /M260 Algebra I Part 1 / Algebra I Part 2
Year - 1 Elective Credit and 1 Math Credit
Students will earn an elective credit for successful completion of this course.
This course provides additional time for students to master the Algebra I standards. Students are enrolled in this class every day for a full block, completing the equivalent of a one-year course during each school semester. Students who are successful during Algebra I Part 1 during the first semester will continue with Algebra I Part 2 during the second semester. Students can earn one elective credit for the completion of Algebra I Part 1 for the first semester and one math credit for the completion of Algebra I Part 2 for the second semester.

M260 Algebra I
Year - 1 Credit
In Algebra I, students use the algebraic skills developed in Math 6, 7, and 8 to represent and solve a variety of practical problems. Tables and graphs will be used to interpret algebraic expressions, equations, and inequalities, and to analyze behaviors of functions. Graphing calculators, computers, and other appropriate technology will be utilized.

M261 Algebra, Functions, and Data Analysis
Year - 1 Credit
Prerequisite: Algebra I
This course is designed for students who have successfully completed the standards for Algebra I. Within the context of mathematical modeling and data analysis, students will study functions and their behavior, systems of inequalities, probability, experimental design, and analysis of data generated by applications in science, business, and finance.

M263 Geometry
Year - 1 Credit
Prerequisite: Algebra I
This course emphasizes coordinates, transformational geometry and measurement, theorems, and formal definitions of geometric terms. Students will work with proofs requiring applications of logic. Students will also solve numerical and algebraic problems which apply geometric concepts. Calculators, computers and graphing utilities are used.

M264 / M263 Geometry Part 1 / Geometry Part 2
Year - 1 Elective Credit and 1 Math Credit
Prerequisite: Algebra I
This course provides additional time for the student to master the Geometry standards. Students are enrolled in this class every day for a full block, completing the equivalent of a one-year course during each school semester. Students can earn one elective credit for the completion of Geometry Part 1 and one math credit for the completion of Geometry Part 2.

M265 Algebra II
Year - 1 Credit
Prerequisite: Geometry
Algebra II includes the study of algebraic expressions, equations, and functions, with an emphasis on linear, absolute value, quadratic, square root, and rational forms. This course also includes polynomial, exponential, logarithmic, and other special functions. These functions serve as tools for modeling real-world situations. Statistical concepts such as regression and the normal distribution are included as well as the probability concepts of permutations and combinations. A graphing calculator is used throughout the course when appropriate.

M266 Algebra III with Trigonometry
Year - 1 Credit
Prerequisite: Algebra II
This course is designed to be an extension of Algebra II. Topics include a thorough study of polynomials, rationals, logarithmic, and exponential functions. Systems of equations and inequalities will be explored as well as conic sections. Students will begin a study of trigonometry concentrating on right triangles and basic trigonometry relationships.

M268 Precalculus
Year - 1 Weighted Credit
Prerequisite: Algebra II
This course is designed for students planning to go on to AP Calculus, AP Statistics or IB Math Studies. It is a rigorous study of advanced algebra, a comprehensive study of functions, and an extensive study of trigonometry. Introduction to limits and other ideas used in calculus will also be studied. A graphing calculator is used at times during the course.

M269 Calculus AB AP
Year - 1 Weighted Credit
Prerequisite: Precalculus
Calculus AB is a college-level course. Topics include functions, limits, derivatives and their applications, and integrals and their applications. A graphing calculator is used throughout the course. Students are encouraged to take the Advanced Placement Examination administered by the College Board and may receive college credit for satisfactory scores.

M270 Statistics AP
Year - 1 Weighted Credit
Prerequisite: Algebra II
Statistics AP is a college level course. Topics include description of data, elementary probability, random sampling, estimation, and hypothesis testing for proportions and means; chi-squares, or some other special applications. Students will study the nature and application of statistical methods including regression and correlation. A graphing calculator is used throughout the course. Students are encouraged to take the Advanced Placement Examination administered by the College Board and may receive college credit for satisfactory scores.

M271 Probability & Statistics
Semester - 1/2 Credit
Prerequisite: Algebra II
This course focuses on the basic concepts and techniques for collecting and analyzing data, drawing conclusions, and making predictions. Topics include: graphical display of data including dotplots, histograms, stemplots, and boxplots; Measures of Central Tendancy; experimental design on planning and conducting a survey, and methods of design; and probability including permutations and combinations. Graphing calculators and computers will be integral components of this course.

M272 Discrete Mathematics
Semester - 1/2 Credit
Prerequisite: Algebra II
Students in this course will study mathematical properties of sets and systems that have a countable (discrete) number of elements. The main focus will be problem-solving in a discrete setting. As students solve problems they will analyze and determine whether or not a solution exists (existence problems), investigate how many solutions exist (counting problems), and focus on finding the best solutions (optimizing problems). Connection will be made to other disciplines. Graphing calculators and computers will be integral components of this course.

M273 Calculus BC AP
Year - 1 Weighted Credit
Prerequisite: Calculus AB or Precalculus with teacher recommendation
AP Calculus BC is a college-level course. Topics include all topics covered in AP Calculus AB with the following additions: Parametric, polar, and vector functions; L'Hopital's Rule; additional techniques of integration; improper integrals; and polynomial approximations and series. A graphing calculator is used throughout the course. Students are required to take the Advanced Placement Examination administered by the College Board. Students will receive an AP Calculus AB sub-score as well as a BC Calculus score. Students may receive one or two semesters of college credit for satisfactory scores.

M283 AP Computer Science A *
Grades 10, 11 and 12 - Year -
1 Weighted Credit
This course is designed for students who are serious about programming. Programming in Java requires a good mathematical background and good problem solving skills. Topics include object-oriented program design in Java, program implementation, program analysis and debugging, use of standard data structures and algorithms, and an awareness of the ethical and social implications of computing systems. Students are encouraged to take the Advanced Placement Examination administered by the College Board and may receive college credit for satisfactory scores.

M284 Programming, Advanced
Grades 10, 11 and 12 - Year -
1 Weighted Credit
Prerequisite: M286
Building on their foundation of programming skills, Advanced Programming students use object-oriented programming to develop database applications, interactive multimedia applications including game applications, mobile applications, and Web applications. Students continue to develop their employability skills as they research pathways for continuing education and careers in the information technology industry and engage in various career-building activities.

M285 Computer Science SL IB *
Grades 11 and 12 - Year - 1 Weighted Credit
In this course, students develop a general understanding of computer science, including system fundamentals, computer organization, networks, computational thinking, problem-solving, and programming. This course includes an academic study of these topics as well as hands on programming experiences with an emphasis on experimental and inquiry-based approach to problem-solving. Students will also study one additional topic chosen by the teacher from a set of options in the IB curriculum. This course can be used to meet the science (Group 4) requirement of the IB Diploma. Students will take the IB examination in May to demonstrate proficiency.

M286 Programming
Grades 9, 10, 11 and 12 - Year - 1 Credit
Prerequisites: Algebra I or teacher recommendation
Students explore programming concepts, use algorithmic procedures, implement programming procedures with one or more standard languages, and master programming fundamentals. Coding is used throughout the course. Graphical user interfaces may be used as students design and develop interactive multimedia applications, including game programs. In addition, students employ modern Web programming languages to create Web pages. Students develop their employability skills through a variety of activities.

M287 Computer Mathematics
Grades 9, 10, 11 and 12 - Year - 1 Credit
Prerequisites: Algebra I
This is an introductory course in computer programming using Visual Basic. Its focus is divided into major topic areas: understanding of data types; basic input and output with screen formatting; numeric operations; logic and loop control; modular style program design; graphics; and using Visual Basic components such as forms and input/output controls. Computer ideas will be introduced in the context of mathematical concepts. The student may elect to use the credit to satisfy the graduation requirement for mathematics provided the student earns a career and technical credential.

M288 AP Computer Science Principles
Grades 11 and 12 - Year -
1 Weighted Credit
AP Computer Science Principles offers a multidisciplinary approach to teaching the underlying principles of computing. The course will introduce students to the creative aspects of programming, abstractions, algorithms, large data sets, the internet, cybersecurity concerns, and the global impacts of computing. Students will pursue their interests in digital projects such as apps, films, games, or music that showcase creativity and helping the community.

M765 Algebra II Pre-Baccalaureate
Grades 9 and 10 - Year - 1 Weighted Credit
Prerequisite: Geometry
Algebra II Pre-Baccalaureate includes the topics taught in Algebra II with further exploration and application of topics. Student will complete additional assessments and explorations outside of class time to ensure adequate preparation for Advanced Placement and/or International Baccalaureate mathematics courses in the future.

M768 Precalculus Pre-Baccalaureate
Grades 10 and 11 - Year - 1 Weighted Credit
Prerequisite: Algebra II
This course is designed for students planning to complete the IB Higher-Level Math series. Typically this class is composed of rising sophomores who have taken Algebra II Pre-Baccalaureate. It is a rigorous study of functions, proof by induction, multivariable systems, non-linear systems, trigonometry, and limits. A graphing calculator is used at times during the course.

M804 Math Studies SL IB
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Algebra III/Trigonometry or Precalculus
This course concentrates on mathematics that students can apply to contexts related as far as possible to other curriculum subjects, to common general world occurrences, and to topics that relate to home, work, and leisure situations. Concepts and principles of the course include number and algebra, sets and logic, geometry and trigonometry, statistics and probability, functions, financial mathematics, and some calculus. This course incorporates a unique feature, the IB project: a written work based on research, guided and supervised by the teacher. The project provides the opportunity for students to undertake investigations of a mathematical nature in the context of other subjects in the curriculum, hobbies, or interests of their choice using skills the students learned before or during the math studies course. Students will take the IB examination in May to demonstrate proficiency.

M807 Mathematics SL IB
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Precalculus
This course underpins mathematical processes and focuses on introducing important concepts through the development of mathematical techniques. In some cases, these concepts are included because

they are essential to any further study of mathematics. The course aims to enable students to develop logical, critical, and creative thinking in mathematics. Mathematics SL IB is a demanding course, containing a broad range of mathematical topics taught at a rigorous level. Topics will include algebra, functions and equations, circular functions and trigonometry, vector geometry, mathematics, statistics and probability, and calculus. Students will compile a portfolio of independent work in the areas of mathematical investigation and modeling, as well as in closed-problem solving. Students will take the IB examination in May to demonstrate proficiency.

M808 Mathematics HL-A IB
Grade 11 - Year - 1 Weighted credit
(Year 1 of a Two-Year Course)
Prerequisite: Precalculus
This course continues studies of functions, equations, and trigonometry and concentrates on calculus topics including limits, derivatives, integrals, and applications. This course is designed for students with a strong background in mathematics who are competent in a wide range of analytical and technical skills. IB credit will be awarded at the conclusion of Year 2.

M809 Mathematics HL-B IB
Grade 12 - Year - 1 Weighted Credit
(Year 2 of a Two-Year Course) Prerequisite: Mathematics HL-A IB
This course is a demanding one encompassing a broad range and in-depth study of mathematical topics including matrices, vectors, statistics, probability, calculus, functions, and discrete mathematics. Students will compile a portfolio of independent work in the areas of mathematical investigation and modeling. Students will take the IB examination in May which covers topics from Year 1 and Year 2.

M810 Computer Science HL-A IB
Grade 11 - Year - 1 Weighted Credit
(Year 1 of a Two-Year Course) This course begins a two-year in-depth study of computer science. Topics include system fundamentals, computer organization, networks, computational thinking, problem-solving and programming, abstract data structures, resource management, and control. This course includes an academic study of these topics as well as hands on programming experiences with an emphasis on experimental and inquiry-based approach to problem-solving. Students will also study one additional topic chosen by the teacher from a set of options in the IB curriculum. IB credit will be awarded at the conclusion of Year 2.

M811 Computer Science HL-B IB
Grade 12 - Year – 1 Weighted Credit
(Year 2 of a Two-Year Course)
The second year of Computer Science HL expands on the topics covered in Computer Science HL-A IB. In addition students will demonstrate mastery of these topics by using the IB Computer Science case study that is released annually. Through a series of labs students will further develop their programming skills. This course can be used to meet the science (Group 4) requirement of the IB Diploma. Students will take the IB examination in May which covers topics from Year 1 and Year 2.

MS101 Naval Science I
Grade 9 - Year - 1 Credit
The purpose of this course is to introduce students to the precepts of citizenship, the elements of leadership, and the value of scholarship in attaining life goals. This course is designed to engender a sound appreciation for the heritage and traditions of America, with recognition that the historically significant role of sea power will be important in America's future, and develop in each cadet a growing sense of pride in his/her organization, associates, and self. These elements are pursued at the fundamental level.

MS102 Naval Science II
Grade 10 - Year - 1 Credit
Prerequisite: Naval Science I
The purpose of this course is to build on the general introduction provided in Naval Science I, to further develop the traits of citizenship and leadership in students, introduce cadets to the technical areas of naval science study, and engender a deeper awareness of the vital importance of world oceans to the continued well-being of the United States.

MS103 Naval Science III
Grade 11 - Year - 1 Credit
Prerequisite: Naval Science II
This course introduces cadets to subjects such as National and Strategic Maritime Policy, Military Law, and Leadership studies. Additionally, this course provides cadets with leadership responsibilities through the use of the leadership laboratory. Cadets will fully explore the challenges of leadership in the same manner as Petty Officers serving in the United States Navy. The curriculum is divided into three distinct areas – Academics, Military/Leadership, and Physical Fitness. Cadets receive a grade in each of the areas and must pass each of the areas to successfully complete the course.

MS104 Naval Science IV
Grade 12 - Year - 1 Credit
Prerequisite: Naval Science III
This course is primarily a leadership laboratory and provides senior cadets the opportunity to lead junior cadets in all aspects except academics. Additionally, this course provides cadets the opportunity to fully explore the challenges of leadership in the same manner as Junior Officers serving in the United States Navy. The curriculum is divided into three distinct areas — Academics, Military/Leadership, and Physical Fitness. Cadets receive a grade in each of the areas and must pass each of the areas to successfully complete the course.

MS105 Naval Science III ADV *
Grade 11 - Year - 1 Weighted Credit
Prerequisite: Naval Science II, required readings, leadership positions, and team membership
This course introduces cadets to subjects such as National and Strategic Maritime Policy, Military Law, and Leadership studies. Additionally, this course provides cadets with leadership responsibilities through the use of the leadership laboratory. Cadets will fully explore the challenges of leadership in the same manner as Petty Officers serving in the United States Navy. The curriculum is divided into three distinct areas – Academics, Military/Leadership, and Physical Fitness. Cadets receive a grade in each of the areas and must pass each of the areas to successfully complete the course.

MS106 Naval Science IV ADV *
Grade 12 - Year - 1 Weighted Credit
Prerequisite: Naval Science III, required readings, leadership positions, and team membership
This course is primarily a leadership laboratory and provides senior cadets the opportunity to lead junior cadets in all aspects except academics. Additionally, this course provides cadets the opportunity to fully explore the challenges of leadership in the same manner as Junior Officers serving in the United States Navy. The curriculum is divided into three distinct areas —Academics, Military/Leadership, and Physical Fitness. Cadets receive a grade in each of the areas and must pass each of the areas to successfully complete the course.

MS201 Aerospace Science I
Grade 9 - Year - 1 Credit
The first year course is about aviation history, focusing on the development of flight throughout the centuries. It starts with ancient civilizations, then progresses through time to modern days. It emphasizes civilian and military contributions to aviation, the development and modernization of the United States Air Force, and a brief history of astronomy and space exploration. In addition, students learn about customs and courtesies of the U.S. Air Force and receive an introduction to the AF JROTC program.

MS202 Aerospace Science II
Grade 10 - Year - 1 Credit
Prerequisite: Aerospace Science I
The second year course is designed to acquaint the student with the aerospace environment, the human requirements of flight, principles of aircraft flight, and principles of navigation. The course begins with a discussion of the atmosphere and weather to develop student understanding of the environment and how that environment affects flight. Discussions include the forces of lift, drag, thrust, and weight. Communications skills also are taught during the leadership education portion of the course.

MS203 Aerospace Science III
Grade 11 - Year - 1 Credit
Prerequisite: Aerospace Science II
The third course in the series provides an overview of astronomy from prehistoric times through today's exploration of our planets. Formation of the Earth and planets, asteroids, comets, and the sun are examined. The Earth's seasons and the moon's motions and influence on the tides are explained. In addition to learning about our own solar system, the course covers elements of manned spaceflight including the space shuttle, international space station, and latest advances in space technology. Life skills including managing personal finances are taught in the leadership education portion of this course.

MS204 Aerospace Science IV
Grade 12 - Year - 1 Credit
Prerequisite: Aerospace Science III
The fourth year is a multidisciplinary course that introduces students to various regions of the world from a geographic, historical, and cultural perspective. The course provides increased international awareness and insight into foreign affairs of other cultures and enhanced knowledge of America's interests and role in the world. Geopolitical issues such as economics, politics, military issues, religion, environmental concerns, human rights, disease, over population, literacy, the migration of peoples, and other cultural issues will be examined. The regional areas included in this course are Europe, the Middle East, South Asia, East Asia, Africa, and Latin America. Management and leadership skills are taught during the leadership education portion of this course.

MS205 Aerospace Science III ADV *
Grade 11 - Year - 1 Weighted Credit
Prerequisite: Aerospace Science II, required readings, leadership positions, and team membership
The third course in the series provides an overview of astronomy from prehistoric times through today's exploration of our planets. Formation of the Earth and planets, asteroids, comets, and the sun are examined. The Earth's seasons and the moon's motions and influence on the tides are explained. In addition to learning about our own solar system, the course covers elements of manned spaceflight including the space shuttle, international space station, and latest advances in space technology. Life skills including managing personal finances are taught in the leadership education portion of this course.

MS206 Aerospace Science IV ADV *
Grade 12 - Year - 1 Weighted Credit
Prerequisite: Aerospace Science III, required readings, leadership positions, and team membership
The fourth year is a multidisciplinary course that introduces students to various regions of the world from a geographic, historical, and cultural perspective. The course provides increased international awareness and insight into foreign affairs of other cultures and enhanced knowledge of America's interests and role in the world. Geopolitical issues such as economics, politics, military issues, religion, environmental concerns, human rights, disease, over population, literacy, the migration of peoples, and other cultural issues will be examined. The regional areas included in this course are Europe, the Middle East, South Asia, East Asia, Africa, and Latin America. Management and leadership skills are taught during the leadership education portion of this course.

P651 Health and Physical Education
Grade 9 - Year - 1 Credit
First aid, alcohol and other drugs, consumer health, diseases and prevention, and family life are taught in the classroom. Moderate to vigorous physical activities are provided through a variety of team, individual, and dual sports.

P660 (Health) P667 (PE) Health and Physical Education
Grade 10 - Year - 1 Credit
This health and physical education program is designed to promote moderate to vigorous physical fitness and good mental health. Students participate in a variety of team, individual, and dual sports and dance. The health content includes mental health, health-related careers, and family life.

P670 Driver Education
Semester - Non-credit
Driver education is taught as part of Health and Physical Education 10. The program consists of thirty-six (36) hours of classroom instruction and fourteen (14) periods of in-car instruction including seven (7) periods of observation time. Students will use driving simulation systems in classroom instruction. A fee is required for the in-car instruction component of driver education; please refer to Parent-Student Handbook for fee list.

P680 Health and Physical Education Grades 11 and 12 - Year - 1 Credit
Prerequisite: Successful completion of Health and Physical Education Grades 9 and 10
Students in the course will further develop skills already acquired in physical education and place emphasis on the development of lifetime sport skills and personal fitness. Students will design and implement their own personal fitness plan and maintain a workout journal. Students will strive to improve skill performance while demonstrating an understanding of the rules and strategies of the sport.

PA01 Computer Information Systems
Grades 9, 10, 11 and 12 - Year - 1 Credit
PA01C Computer Information Systems (Co-op) *
Grades 9, 10, 11 and 12 - Year - 2 Credits
Students apply problem-solving skills to real-life situations through word processing, spreadsheets, databases ,multimedia presentation, and integrated software activities. Students work individually and in groups to explore computer concepts, operating systems, networks, telecommunications, and emerging technologies.

PA11 Business Law
Grades 10, 11 and 12 - Semester - 1/2 Credit
In Business Law, students gain knowledge of legal principles pertaining to business activities. Students will acquire an understanding of law as it applies to daily living and a working knowledge of the legal system for consumers. *NOTE: Student should pair this course (PA11) with another semester course.*

PA12 Business Management
Grades 10, 11 and 12 - Semester - 1/2 Credit
In Business Management, students review the social and economic environments of national and international business. Students study the relationship of economic risk, inflation and monetary policies, and business. Business ownership, finance, and communication also are studied. *NOTE: Student should pair this course (PA12) with another semester course.*

PA17 Principles of Business and Marketing
Grades 9 and 10 - Year - 1 Credit
Students explore the role of business and marketing in the free enterprise system and the global economy. Students are prepared to make decisions as consumers, wage earners, and citizens. Instruction includes banking and credit, business and marketing economics, the free enterprise system, and business operation. This is a foundation course in the business and marketing programs.

PA20 Technical Drawing and Design
Grades 9, 10, 11 and 12 - Year - 1 Credit
Technical Drawing and Design (TDD) is the first course in the drafting program. During the year students will develop skills and techniques used in the drafting industry. Such skills include hand drafting practices of lettering, line work, and measuring skills. Approximately 50% of the time will be spent learning Computer-Aided-Drafting (CAD) skills, which is becoming the industry standard. This is the practice of using a computer and software to produce a drawing which is "plotted-out" to produce a hard copy drawing. Both practices require visualization of objects in two and three dimensions. This is an excellent class for students planning a career in architecture, engineering, or drafting. The class requires a great deal of precise and detailed work, along with a knowledge of basic math.

PA21 Architectural Drawing
Grades 11 and 12 - Year - 1 Credit
Prerequisite: Technical Drawing and Design
Architectural Drawing is an advanced drafting class based on residential design and construction. Each student designs a

** The cooperative education option requires the student to participate in the classroom portion of the class as well as work 396 hours during the school year.*

home, based on a study of proper design and construction practices. This serves as the basis for drawing a complete and detailed set of house plans. A properly drawn set of plans could be used in constructing the house. Students are also required to complete a scale model of the house with landscaping. All drawings are larger and more complex than those in TDD and require students to display greater skill and independent thought than in TDD. A large portion of the work will be done on the CAD system. This class would be helpful for students planning a career in architecture, home construction, or related drafting.

PA22 Engineering Drawing and Design
Grades 10, 11 and 12 - Year - 1 Credit
Prerequisite: Technical Drawing and Design
Engineering Drawing is an advanced drafting class that emphasizes the use of drafting in engineering and manufacturing. Projects are of larger scale and greater complexity than in basic technical drawing. Students are expected to display a greater skill and knowledge than in TDD. Model construction related to the drawing projects will also be used in the class. Projects may include toy design, bridge design and construction and industrial illustration. There will also be an outside-of-class project. Students will do a large portion of the work on the Computer-Aided-Drafting (CAD) system. This class will be useful in developing skills for students planning a career in engineering or extensive use of drafting.

PA23 Drawing & Design ADV
Year - 1 Weighted Credit
Prerequisite: PA21 Architectural Drawing OR PA22 Engineering Drawing
This course requires an understanding of drafting and AutoCAD software. Students develop the ability to create three-dimensional drawings to illustrate the relationship of mechanical components or to provide a realistic view of all parts of a structure. Students will be introduced to the three-dimensional capabilities of AutoCAD and other software modeling software.

PA38 Virginia Teachers for Tomorrow I *
Grades 11 and 12 - Year - 1 Weighted Credit
Virginia Teachers for Tomorrow (VTfT) fosters student interest, understanding, and appreciation of the teaching profession, and allows secondary students to explore careers in education. Students build a foundation for teaching; learn the history, structure and governance of teaching; apply professional teaching techniques in the VTfT classroom and field experience; and reflect on their teaching experiences. Additional educational leadership opportunities are offered through the student organization, Educators Rising.

PA40 Education for Employment
Grades 9, 10, 11 and 12 - Year - 1 Credit
PA40C Education for Employment (Co-op) *
Grades 9, 10, 11 and 12 - Year - 2 Credits
PA41 Education for Employment
Grades 9, 10, 11 and 12 - Semester - 1/2 Credit
PA41C Education for Employment (Co-op) *
Grades 9, 10, 11 and 12 - Semester - 1 Credit
Students enrolled in this course should meet the state requirements for participation in EFE. The course provides these students an opportunity to explore the world of work as well as prepare for successful employment. This course may also prepare students to enroll in another technical education program or to enter into employment with the school's transition specialist. Instruction includes developing values important for employment, occupational preparation, human relations, independent living, and career exploration. Co-op placement is based on the student's occupational interest. The classroom teacher may determine the student's readiness for co-op placement.
NOTE: Students choosing the semester option (PA41) must pair the course with another semester course.

PA42 Virginia Teachers for Tomorrow II *
Grade 12 - Year - 1 Weighted Credit
Students continue to explore careers in the Education and Training Cluster and pathways. This course provides the opportunity for students to prepare for careers in education as they research postsecondary options, learn about the process of teacher certification in Virginia, and participate in a practicum experience.

PA43 Jobs for Virginia Graduates
Grade 12 – Year – 1 Credit
Jobs for Virginia Graduates (JVG) provides students with the tools to develop core skills that encourage independent, responsible, and productive living. The JVG curriculum addresses thirty-seven competencies in career development, job attainment, and job survival, as well as basic competencies in written and verbal communications and mathematical calculations. The program promotes the Career Association, a student-led organization designed to aid students in leadership development, organizational skills development, team building, and demonstrating the ability to accomplish a set of goals. In a twelve-month follow-up upon graduation, the job specialist assists the student participants in successful job placements, military appointments, or further educational opportunities.

PA46 Marketing
Grades 10 and 11 - Year - 1 Credit
PA46C Marketing (Co-op) *
Grades 10 and 11 - Year - 2 Credits
Prerequisite: Principles of Business and Marketing; meeting prerequisite makes Co-op optional
This course introduces the various skills required for job entry and success in marketing related occupations. Topics in the class include selling, advertising, visual merchandising, stock keeping, marketing, mathematics, and product/service technology. Students may participate in marketing cooperative education. The marketing coordinator must approve a job directly related to marketing industry before students can be accepted into marketing cooperative program.

PA47 Marketing ADV
Grades 11 and 12 - Year - 1 Credit
PA47C Marketing ADV (Co-op) *
Grades 11 and 12 - Year - 2 Credits
Prerequisite: Marketing or Sports and Entertainment Marketing Management
Students in the class refine skills in many of the marketing skill sets studied in General Marketing. Sales promotion, market research, and management are also studied. This course is recommended for students interested in careers or further education in business and/or marketing management. Students combine classroom instruction with marketing work experience. The marketing instructor must approve a job directly related to the marketing industry before students can be accepted into the marketing cooperative education program.

PA49 Sports and Entertainment Marketing Management
Grades 11 and 12 - Year - 1 Credit
PA49C Sports and Entertainment Marketing Management (Co-op) *
Grades 11 and 12 - Year - 2 Credits
This course introduces students to the business and marketing principles associated with the Sports and Entertainment Industry. Students will develop skills in the areas of marketing analysis, event marketing, and sponsorship, communication, pricing, and financial analysis, human relations, and the social impact the Sports and Entertainment Industry has on society and international relations. The marketing coordinator must approve a job directly related to the marketing industry before students can be accepted into the marketing cooperative education program.

PA50 Entrepreneurship
Grades 11 and 12 - Year - 1 Credit
PA50C Entrepreneurship
Grades 11 and 12 - Year - 2 Credits
Students who plan to own or operate a business or to have careers in business management, sales, or marketing, will acquire necessary skills and knowledge in this course. Topics include: attributes and behaviors of entrepreneurs; financial requirements and strategies; marketing plan; operation plan and research. Students can combine classroom instruction with marketing work experience. The marketing coordinator must approve a job directly related to the marketing industry before students can be accepted into the marketing cooperative eduation program.
Recommended third course in all Career & Technical Education Sequences.

** The cooperative education option requires the student to participate in the classroom portion of the class as well as work 396 hours during the school year.*

PA60 Agricultural Fabrications and Emerging Technologies
Grades 10, 11 and 12 - Year - 1 Credit
PA60C Agricultural Fabrications and Emerging Technologies (Co-op) *
Grades 10, 11 and 12 - Year - 2 Credits
Prerequisite: Introduction to Power, Structural and Technical Systems
This course advances many of the metal working skills learned in Mechanical Fundamentals and Technical Systems. Welding and metal operations include Mig welding, other advanced welding techniques, and Plasma-arc welding. Other hot and cold metal skills will be refined. Students will use GPS technology to manage precision agricultural operations. Classroom instruction includes leadership skills and FFA activities.

PA65 Introduction to Power, Structural and Technical Systems
Grades 9, 10 and 11 - Year - 1 Credit
This course introduces a variety of metal and mechanical related skills. Technical skills taught include gas and arc welding, working with metals, and small engine servicing. Technical systems such as electrical systems are introduced. Course content includes leadership skills, FFA and career opportunities. Class is a combination of classroom study and practical application. *This course is a prerequisite for "Power Systems" and "Emerging Mechanical Technologies."*

PA66 Agricultural Power Systems
Grades 10, 11 and 12 - Year - 1 Credit
PA66C Agricultural Power Systems (Co-op) *
Grades 10, 11 and 12 - 2 Credits
Prerequisite: Introduction to Power, Structural and Technical Systems
Areas of study in this course include repairing small engines, power trains, mower or tractor electrical systems and controls, care and maintenance of equipment, and using precision measurement tools. Leadership skills and FFA activities are important parts of this class. The course is a combination of classroom and practical application.

PA68 Turfgrass Establishment and Maintenance
Grades 10, 11 and 12 - Year - 1 Credit
PA68C Turfgrass Establishment and Maintenance (Co-op) *
Grades 10, 11 and 12 - Year - 2 Credits
Prerequisite: Horticultural Sciences or Introduction to Power, Structural and Technical Systems
The turf grass program prepares students for careers in the growing industry of turf management. This course is the study of the establishment and maintenance of turf grasses. Topics include turf grass varieties, establishment, fertilization, and mowing. The course introduces turf equipment maintenance and the design of sports areas. Classroom instruction includes leadership skills and FFA activities.

PA69 Turfgrass Applications ADV *
Grades 11 and 12 - Year - 1 Credit
PA69J Turfgrass Applications ADV (Dual Enrollment RCC HRT 269 and HRT 295 Year - 1 Credit
PA69C Turfgrass Applications ADV (Co-op) *
Grades 11 and 12 - Year - 2 Credits
Prerequisite: Turf Grass Establishment and Maintenance
This course expands the skills learned in Turf Grass Establishment and Maintenance. Management skills required for careers in the turf grass industry are emphasized. Course content includes turf grass related careers, irrigation principles, pest control, environmental issues, business management, and turf related facility design. Classroom instruction includes leadership skills and FFA activities.

PA70 Horticultural Sciences
Grades 9, 10, 11 and 12 - Year - 1 Credit
Students learn the fundamental skills required for all other courses in the horticulture program. Course includes the study of major cultural and environmental uses of plants, landscaping, gardening, propagating, cultivation of indoor plants, and greenhouse management. Cooperative education is not available with this class. Classroom instruction includes leadership skills and FFA activities.

PA71 Landscaping 1
Grades 10, 11 and 12 - Year - 1 Credit
PA71C Landscaping 1 (Co-op) *
Grades 10, 11 and 12 - Year - 2 Credits
Prerequisite: Horticultural Sciences
This course is designed to develop and strengthen the knowledge and skills necessary for employment in landscape management and landscape maintenance occupations. Course content includes landscape graphics, design, site analysis, landscape installation, and maintenance. CAD landscape design software will be integrated with instructional units in this course. Classroom instruction includes leadership skills and FFA activities.

PA72 Greenhouse Plant Production and Management
Grades 10, 11 and 12 - Year - 1 Credit
PA72C Greenhouse Plant Production and Management (Co-op) *
Grades 10, 11 and 12 - Year - 2 Credits
Prerequisite: Horticultural Sciences
This course covers plant production and technology related to the greenhouse and nursery industries. Content includes production and marketing techniques of typical ornamental plants. Classroom instruction includes leadership skills and FFA activities.

PA73 Floriculture
Grades 10, 11 and 12 - Year - 1 Credit
PA73C Floriculture (Co-op) *
Grades 10, 11 and 12 - Year 2 Credits
Prerequisite: Horticultural Science
This course concentrates on one primary field of horticulture—the production of floral crops, floral design, and floral product marketing. The focus is on the development of skills in greenhouse production, flower arranging, and marketing. Classroom instruction includes leadership skills and FFA activities.

S354 Biology I ADV
Grades 9 and 10 - Year - 1 Weighted Credit
Concurrent enrollment in Advanced English recommended because of the research and writing component.
This advanced biology course is rigorous, a fast paced course and explores in depth, biological concepts and the scientific process. Areas of study include the cells, biochemistry, genetics, classification, evolution, and ecology. The major investigative skills used by practicing biologists are stressed. Students are expected to be independent learners with good communication skills. Students are required to complete extensive laboratory work including an independent research project. Students are expected to use the scientific method to discover scientific principles.

S355 Biology I
Grade 10 - Year - 1 Credit
In this course, students are introduced to major biological concepts within the construct of scientific investigation. Areas of study include the cells, biochemistry, genetics, classification, evolution, and ecology. Students are expected to use the scientific method to discover scientific principles.

S357 Ecology
Grades 11 and 12 - Year - 1 Credit
Prerequisite: Biology I
This course is designed to help the student understand environmental principles, the consequences of human activities, and the impact of these activities on Earth. All students who will make future environmental decisions through their vote and through their actions as citizens could benefit from this class. Laboratory experiments are used to teach conceptual themes through process skills. Students are required to submit written laboratory reports and to design and conduct an investigation whether in small groups or as an individual.

S358 Anatomy/Physiology
Grades 11 and 12 - Year - 1 Credit
Prerequisite: Biology I
Anatomy/Physiology is designed to provide students with an in-depth study of the structure and function of the human body. The skeletal, muscular, circulatory, respiratory, digestive, excretory, nervous, reproductive, and endocrine systems are included. The relationships of body structure and function are emphasized. Laboratory work includes dissections and physiology experiments. Laboratory experiments are used to teach conceptual themes through process skills. Students are required to submit written

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laboratory reports and to design and conduct an investigation whether in small groups or as an individual. Students are expected to use the scientific method to discover scientific principles.

S359 Biology AP
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisites: Biology I and Chemistry I. Curriculum for this course is governed by the AP College Board.
Biology AP is an overview of the major principles and processes in the areas of molecular and cellular biology and organisms—population biology. AP Biology content and lab work compose 70-80% of the course, while 20-30% of the course is devoted to experimental research. Every student is required to complete a research project that is experimental in nature. The research project must be completed to receive credit for the AP course. Students are encouraged to take the Advanced Placement Examination administered by the College Board and may receive college credit for satisfactory scores.

S360 Introduction to Biotechnology
Grades 11 and 12 - Year - 1 Credit
Prerequisite: Biology I
This course will introduce students to the vast scope of biotechnology, its applications, implications for the future, and the many careers available in this field. Biotechnology is shaping the future in career areas including medicine, industry, environmental science, and agriculture. Students will learn and apply many laboratory skills such as sterile techniques, serial dilution, bacterial techniques, DNA analysis, cloning, protein analysis, immunology, histology, microscope techniques, and plant engineering. Topics studied will include application of genetic engineering, specifically plant transformation by bacteria, production of drugs by bacteria, and gene insertion as a cure for cancer. The course will provide students with the history, background, and knowledge of biotechnology that are necessary to analyze breakthroughs for validity and credibility and to make informed ethical decisions.

S361 Chemistry I ADV
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite or concurrent enrollment: Algebra II. Concurrent enrollment in Advanced English recommended because of the research and writing component.
Concepts are discussed in greater depth and detail than at the standard level. Students are introduced to basic chemical concepts including the composition of matter, atomic structure, periodic table, chemical bonding, formulas and equations, reacting quantities, and acid base theory. Students are expected to use the scientific method to discover scientific principles. Students are required to submit written laboratory reports and short papers, and to design and conduct an independent research project. The major skills used by practicing chemists are emphasized.

S362 Chemistry I
Grades 11 and 12 - Year - 1 Credit
Prerequisite or concurrent enrollment: Algebra II
Students are introduced to basic chemical concepts including the composition of matter, atomic structure, periodic table, chemical bonding, formulas and equations, reacting quantities, and acid base theory. Laboratory experiments are used to teach conceptual themes through process skills. Students are expected to use the scientific method to discover scientific principles and to submit written laboratory reports.

S363 Chemistry AP
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Chemistry I
Chemistry AP is a survey course of the major principles of chemistry including the structure of matter, kinetic theory of gases, chemical equilibrium, chemical kinetics, and basic concepts of thermodynamics. AP Chemistry content and lab work compose 70-80% of the course, while 20-30% of the course is devoted to experimental research. Every student is required to complete a research project that is experimental in nature and requires a formal lab write up. The research project must be completed to receive credit for the AP course. Students are encouraged to take the Advanced Placement Examination administered by the College Board and may receive college credit for satisfactory scores.

S365 Physics I
Grades 10, 11 and 12 - Year - 1 Credit
Prerequisite: Algebra I
The Physics course emphasizes a more complex understanding of experimentation, the analysis of data, and the use of reasoning and logic to evaluate evidence. The use of mathematics, including algebra, inferential statistics, and trigonometry, is important, but conceptual understanding of physical systems remains a primary concern. Students build on basic principles of physical science by exploring in depth the nature and characteristics of energy and its dynamic interaction with matter. Key areas covered include force and motion, thermodynamics and fluid mechanics, energy transformations, wave phenomena and the electromagnetic spectrum, light, electricity, fields, and non-Newtonian physics. The course stresses the practical application of physics in other areas of science and technology and how physics affects our world. Students are expected to use the scientific method to discover scientific principles. Students are required to submit written laboratory reports and to design and conduct research projects that are experimental in nature. Investigative skills used by the practicing physicist are emphasized.

S367 Physics C AP
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite or concurrent enrollment: Calculus AP
Curriculum for this course is governed by the AP College Board. AP Physics C is equivalent to the first part of a college sequence that serves as a foundation in physics for students majoring in the physical sciences or engineering. Mechanics, electricity, and magnetism are emphasized. Every student is required to complete a research project that is experimental in nature. The research project must be completed to receive credit for the AP course. Students are encouraged to take the Advanced Placement Examination administered by the College Board and may receive college credit for satisfactory scores.

S368 Oceanography
Grades 10, 11 and 12 - Year - 1 Credit
Prerequisite: Earth Science
In this course the theories of Earth's structure and plate tectonics will be presented as a base on which to build the explanation of the physical features of the ocean floor. Both historical and physical geology of the ocean floor will be investigated. Students will study the physical properties of seawater, marine chemistry, marine organisms, salinity and density, circulation within the oceans, waves, currents, tides, and oceanographic instruments and environmental issues through research. Emphasis will be placed on the major skills of practicing oceanographers and scientists. Students will be required to submit written laboratory reports and to design and conduct investigations in small groups, as an individual, or as a class.

S370 Environmental Science AP
Grades 10, 11 and 12 - Year - 1 Weighted Credit
Prerequisites Earth Science or Adv. Biology. Curriculum for this course is governed by the AP College Board.
Topics covered in the course include: global changes and their consequences, human population dynamics, renewable and nonrenewable resources, environmental ethics, and ecological processes. Every student is required to complete a research project that is experimental in nature. The research project must be completed to receive credit for the AP course. Students are encouraged to take the Advanced Placement exam administered by the College Board and may receive college credit for satisfactory scores.

S371 Earth Science
Grade 9 - Year - 1 Credit
In this course, students are introduced to major earth science concepts within the construct of scientific investigation. Areas of study include geology, astronomy, meteorology, oceanography and atmosphere. Students are expected to use the scientific method to discover scientific principles.

S372 Physics I AP
Grades 10, 11 and 12 - Year - 1 Weighted Credit
Prerequisite or concurrent enrollment: Pre-Calculus or Trigonometry/Algebra III
Physics I AP is the equivalent to a first-semester college course in algebra-based physics. The course covers Newtonian mechanics (including rotational dynamics

and angular momentum), work, energy, and power; mechanical waves and sound. It will also introduce electric circuits. Approximately 25 percent of instructional time is devoted to laboratory investigations which foster students' engagement in the practice of science through experimenting, analyzing, making conjectures and arguments, and solving problems in a collaborative setting. Students are encouraged to take the Advanced Placement Examination administered by the College Board and may receive college credit for satisfactory scores.

S373 Physics II AP
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Physics I AP
Physics II AP is the equivalent to a second semester college course in algebra-based physics. The course covers fluid mechanics, thermodynamics, electricity and magnetism, complex circuits with capacitors, optics, atomic, and nuclear physics. Approximately 25 percent of instructional time is devoted to laboratory investigations which foster students' engagement in the practice of science through experimenting, analyzing, making conjectures and arguments, and solving problems in a collaborative setting. Students are encouraged to take the Advanced Placement Examination administered by the College Board and may receive college credit for satisfactory scores.

S374 Earth Science ADV
Grade 9 - Year - 1 Weighted Credit
Prerequisite: Concurrent enrollment in Algebra I. Advanced English recommended because of the research and writing component.
This advanced earth science course is rigorous, a fast paced course and explores in depth, geological concepts and the scientific process. Areas of study include geology, astronomy, meteorology, oceanography and atmosphere. Students are expected to be independent learners with good communication skills. Students are expected to use the scientific method to discover scientific principles.

S754 Biology I Pre-Baccalaureate
Grade 9 - Year - 1 Weighted Credit
Concurrent enrollment in Advanced or PB English recommended because of the research and writing component.
The Pre-Baccalaureate course is rigorous, fast paced and explores, in depth, biological concepts and the scientific process. Areas of study include the cells, biochemistry, genetics, classification, evolution and ecology which are explored from a global perspective. Investigative skills used by practicing biologists are stressed. Students are expected to be independent learners with good communication skills. Students are required to complete extensive laboratory work including an independent research project using the scientific method to discover scientific principles. This course will prepare students for future IB classes.

S761 Chemistry I Pre-Baccalaureate
Grade 10 - Year - 1 Weighted Credit
Prerequisite or concurrent enrollment: Algebra II and PB English
Concepts are discussed in greater depth and detail than at the standard level. Students are introduced to basic chemical concepts including the composition of matter, atomic structure, periodic table, chemical bonding, formulas and equations, reacting quantities, and acid base theory. Students are expected to use the scientific method to discover scientific principles. Students are required to submit written laboratory reports and short papers, and to design and conduct an independent research project. The major skills used by practicing chemists are emphasized.

S805 Biology SL IB
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Completion of Biology I and Chemistry I
In this course, students develop a broad understanding of the principles of biology. Topics include the chemistry of life, the cellular components of life, cell processes, genetics, ecology, evolution, and applied human physiology. IB requires students to conduct research assignments, relate lecture material to unique problems, and identify unknown organisms and/or processes. Students will spend 40 hours on practical/investigative work including 10 hours on an interdisciplinary project. Students will take the IB examination in May to demonstrate proficiency.

S806 Biology HL-A IB
Grade 11- Year - 1 Weighted Credit
(Year 1 of a Two-Year Course) Prerequisite: Completion of Biology I and Chemistry I
This course begins a two-year in-depth investigation of the principles of biology. Topics include the chemistry of life, nucleic acids, the cellular components of life, cell processes, genetics, ecology, and applied human physiology. Recognizing that many scientific problems are international in nature and therefore require a global approach to research will be a focus of the course. IB requires students to conduct research assignments, relate lecture material to unique problems, and identify unknown organisms and/or processes. Students will spend 60 hours on practical/investigative work during the two years of this course, including 10 hours on an interdisciplinary project aimed at developing an understanding of the relationships between scientific disciplines and their influence on other areas of knowledge. IB credit will be awarded at the conclusion of Year 2.

S807 Biology HL-B IB
Grade 12 - Year - 1 Weighted Credit
(Year 2 of a Two-Year Course)
Prerequisite: Biology HL-A IB
The second year of IB Biology HL will allow students to deepen their study of topics covered in Year 1. Students will also focus on contemporary science elective topics outlined in the IB curriculum. These concepts include neurobiology and behavior, biotechnology and bioinformatics, ecology and conservation and human physiology. Students will continue to develop their laboratory skills through independent and group centered investigations. Students will take the IB examination in May which covers topics from Year 1 and Year 2.

S808 Chemistry SL IB
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Completion of Chemistry I
This course combines academic study with the acquisition of practical and investigational skills. Chemical principles, such as stoichiometry, atomic theory, periodicity, bonding, states of matter, energetics, kinetics, equilibrium, acids and bases, oxidation and reduction, as well as basic organic chemistry, are major topics in the course. IB requires students to produce an interdisciplinary project that is a mixture of short-term and long-term investigations and projects. Students will take the IB examination in May to demonstrate proficiency.

S809 Chemistry HL-A IB
Grade 11- Year - 1 Weighted Credit
(Year 1 of a Two-Year Course)
Prerequisite: Completion of Chemistry I
This course begins a two-year in-depth investigation of the core topics of chemistry including periodicity, bonding, states of matter, energetics, kinetics, stoichiometry, equilibrium, atomic theory, acids and bases, oxidation and reduction, and the impact of chemistry on modern science. Students will focus on how chemistry underpins all natural and industrial systems. Students will spend 60 hours on practical/investigative work during the two years of this course, including 10 hours on an interdisciplinary project. IB credit will be awarded at the conclusion of Year 2.

S810 Chemistry HL-B IB
Grade 12 - Year - 1 Weighted Credit
(Year 2 of a Two-Year Course)
Prerequisite: Chemistry HL-A IB
The second year of IB Chemistry HL devotes additional time to the chemistry topics shown under Chemistry HL-A IB, plus aspects of modern analytical chemistry and organic chemistry. Students will continue to develop their laboratory skills through independent and group-centered investigations. Students will take the IB examination in May which covers topics from Year 1 and Year 2.

S811 Physics SL IB
Grades 11 and 12 - Year - 1 Weighted Credit
This course combines academic study with the acquisition of practical and investigational skills in the physical sciences. Core concepts such as physics and physical measurement, mechanics, thermal physics, waves, electricity and magnetism, and atomic and nuclear physics are the focus of this course. Students will spend 40 hours on practical/investigative work including 10 hours on an interdisciplinary project. Students will take the IB examination in May to demonstrate proficiency.

SPM300 Sports Medicine/Athletic Training
Grades 11 and 12 - Year - 1 Credit
This course will provide students with an overview of the field of sports medicine. It is designed for students who may be interested in a career in sports medicine, physical therapy, or other health-related fields. Such students also should consider taking the science elective Anatomy and Physiology.

T817Y TOK A
T818Y TOK B
Theory of Knowledge (TOK) IB
Year - 1 Weighted Credit for each year
Prerequisite: IB candidates only
TOK is an interdisciplinary course intended to stimulate critical reflection upon the knowledge and experience IB students gain inside and outside the classroom. TOK challenges students to question the bases of knowledge, to be aware of subjective and ideological biases, and to develop a personal mode of thought based on analysis of evidence expressed in rational argument. TOK seeks to develop a coherent approach to learning that transcends and unifies the academic subjects and encourages appreciation of other cultural perspectives. Thus, students engage in a wide array of research topics and classroom discussions. TOK students submit an essay to IB for assessment, but, unlike other IB courses, students do not take an IB examination to demonstrate proficiency. This course will be offered over a two-year period as part of the IB Diploma Program.

TA841 Apprenticeship
Grade 12 - Year - Maximum of 3 Credits
Hanover students in the twelfth grade may apply for an apprenticeship program requiring corequisite classroom instruction in an approved high school or dual enrollment college course. A registered youth apprentice earns work experience hours that may be transferred to an adult apprenticeship program, in addition to a maximum of three high school credits. The school principal must approve the number of credits before the student may enroll.

The Youth Apprenticeship Work Experience Program is an extension of the student's high school career plan.

The Mutual Expectation Agreement must be signed and returned to the Coordinator of Career and Technical Education before the student is enrolled in this program. Student apprenticeships must be registered by the Department of Labor. Failure to maintain employment during the school year will result in the loss of all Carnegie Units of credit for work experience.

Students should do the following to enroll and complete the apprenticeship successfully:
- Obtain application form from school counselor.
- Attend orientation session in May.
- Share responsibility with school division's youth apprenticeship advisor for locating a business sponsor.
- Sign, return, and honor Mutual Expectations Agreement.
- Maintain academic progress toward graduation.
- Develop and follow a 12th grade plan that links academic and technical course work to the workplace.
- Meet the required job performance expectations.
- Abide by the company's policies (rules and regulations) and safety procedures.
- Have a serious interest in continuing the apprenticeship after high school.
- Show proof of apprenticeship being registered.

Co-operative Education: The Virginia Department of Education defines co-operative education as "an arrangement that allows students to alternate between classroom instruction and actual work experiences, receiving school credit for both." The work experience must be related directly to the cooperative education class. Cooperative education involves close coordination of the work experience between the classroom teacher and the student's employer. Students may receive a Carnegie unit of credit for successful completion of 396 hours of work experience through an approved co-operative education class. Students must have reached their sixteenth birthday and hold a valid Virginia driver's permit to participate.

Shadowing: Shadowing is a short term work-based experience which provides the student an opportunity to explore a career, specific job, or general operation of a business. Teachers are encouraged to identify and to facilitate for students' shadowing experiences which will offer means of connecting classroom learning with career exploration and preparation.

Mentorship: Eleventh and twelfth grade students have the opportunity to apply for the Mentorship Program which offers one-half Carnegie unit of credit for one semester of study. Students are paired with community professionals in a one-to-one relationship with the intent of providing direct experience in a career field of the student's choice. Seminar sessions are required for successful completion of the program. Mentorships for all students can be designed with the approval of the principal, career counselor, and parents.

Work Experience: Students are encouraged to experience work and gain skill in a work setting prior to graduation. The integration of students' academic and technical learning is a goal in the school division. Partnerships with area businesses and industries provide students many opportunities to work and thereby to explore career interests.

Summer Work Experience (CR55): Students entering the 11th and 12th grades have the opportunity to apply for summer work experience which offers 1/2 credit for 90 hours of work/study. Students interested in experiencing first hand a particular career or career field are paired with a skilled mentor in a local business. Participation in this program requires the student to work at the site during a designated period. Students must assume primary responsibility for obtaining a site for their experience and provide their own transportation. Students will meet during the summer with a school coordinator to discuss topics relating to employment and will be required to maintain a portfolio documenting their experience. Students will be expected to comply with the workplace and school program standards, policies, and regulations, and may be dismissed without receiving credit for failure to comply. Applications may be obtained from the school career counselor and are due by June 1.

TS100 Automotive Technology I
Grade 11 - Year - 3 Credits
This is the first course in a series of two which form an ASE certified program in Maintenance and Light Repair. Standards and the certification process are managed by the National Automotive Technicians Education Foundation (NATEF). In this course students will begin to learn the skills for diagnosing and repairing major components of the automobile. Automotive Technology I will be based on safety, an introduction to automotive technology, preventative maintenance, electrical/electronics, brake systems, and suspension/steering. Students will also be trained on the components of the Virginia State Inspection Certification.

TS101 Automotive Technology II
Grade 12 - Year - 3 Credits
Prerequisite: TS100
In this second course of Automotive Technology, students will continue their study of major automotive systems and will master diagnostic and repair skills related to engine performance and engine repair, to include computer systems, ignition and fuel systems, emission and exhaust systems, manual transmission and drive trains, automatic transmission and transaxles, and heating and air conditioning systems. Students will build upon skills and knowledge mastered in Automotive Technology I. Students will also finish training on the components of the Virginia State Inspection Certification and may be eligibile to take the Virginia State Inspection Certification Exam. Upon completion of TS101, students will be elgible to take the ASE Student Certification credential exams.

TS109 Cosmetology I
Grade 11 - Year - 3 Credits
In this introductory course students study hair, skin, and nails, and their related care. Students are grounded in theory as they prepare to practice procedures in a clinical lab setting or classroom using manikins for manipulative skill practice.

The first-year course emphasizes personal safety, professionalism, and sanitation and disinfection of equipment and facilities. Students develop skills in shampooing and conditioning hair, as well as styling and cutting hair. They are introduced to chemical texture services and develop skills in manicure and pedicure procedures.

TS110 Cosmetology II
Grade 12 - Year - 3 Credits
Prerequisite: TS109
In this advanced course students build on their theoretical foundation of general sciences and practices in cosmetology to increase proficiency in hair cutting and styling on live models,with attention to professionalism, client consultation, safety, and infection control. Students are trained in safe chemical processes related to permanent waves, relaxers, soft-curl permanent waves, lightening, and coloring hair. They also develop artistic skills with wigs and hair additions. In addition, students learn to care for skin, hands, and feet, developing experience in providing facials, manicures, pedicures, and nail enhancements. A business management unit focuses on managing the salon. Upon successful completion of the course competencies, as well as meeting required training hours, students may be eligible to sit for the Virginia State Licensing Exam.

Upon completion of the two course sequence TS109 and TS110, students will be eligible to take the Virginia State Board licensing exam, provided by the Virginia Board of Barbers and Cosmetology, Department of Professional and Occupational Regulations.

TS117 Culinary Arts I
Grade 11 - Year - 3 Credits
In this course, students will be provided with the foundations for a comprehensive knowledge of the food service industry and with opportunities to build technical skills. Students will examine and practice basic rules and procedures related to kitchen and food safety, kitchen sanitation procedures, and emergency measures. Students will use math and reading skills continuously as they deal with recipes, manuals, costs, and inventory management. Students will explore the purchasing and receiving of goods and study fundamental nutritional principles and guidelines. As they explore food preparation techniques, students will practice applying these techniques to the preparation and serving of basic food products.

TS118 Culinary Arts II
Grade 12 - Year - 3 Credits
Prerequisite: TS117
In this course, students will be provided with continuing opportunities to acquire a comprehensive knowledge of the food service industry, as well as expand their technical skills. Students will practice kitchen safety and sanitation, apply nutritional principles to food preparation and storage, perform a wide range of more advanced food preparation techniques including garde manager and baking, refine their dining room serving skills, develop menus, perform on-site and off-site catered functions, and strengthen their business and math skills. Upon completion of TS118, students will be eligible to take the Servsafe assessment provided by the Education Foundation of the National Restaurant Association.

TS122 Heating, Ventilation, Air Conditioning and Refrigeration I
Grade 11 - Year - 3 Credits
HVAC/R I prepares students to install, repair, and maintain the operating conditions of heating, air conditioning, and refrigeration systems. Students will work with piping and tubing, study heat and electricity, install duct systems and learn the necessary skills to comply with EPA regulations. Instruction will also include lab and trade safety, detailed work with control systems, mathematics for HVAC/R and customer relation skills. Students will be instructed utilizing the NCCER Apprenticeship post-secondary education curriculum. If a student passes all assessments within the core and HVAC/R modules, they will complete one year of the NCCER post-secondary apprenticeship education program and earn two high school industry credentials. Students will also be provided with the opportunity to botain CPR/First Aid certification.

TS123 Heating, Ventilation, Air Conditioning and Refrigeration II
Grade 12 - Year - 3 Credits
Prerequisite: TS122
Students will refine their basic skills and technical knowledge necessary to gain employment in the HVAC/R field. These skills include installing air conditioning equipment, ductwork, heat pumps, and furnaces. In addition, students will learn the theory of design for HVAC/R equipment, and techniques for proper maintenance and service of residential and commercial facilities. Students may have the opportunity to complete this course through work-based learning.

During the two year course sequence TS122 and TS123 students will be eligible to take the Environmental Protection Agency (EPA) Certification for Refrigerant Recovery.

TS124 Carpentry I
Grade 11 - Year - 3 Credits
Carpentry I is the building block for achieving high-level construction industry skills that can result in an exciting and lucrative career. With an emphasis on safety, students are taught to use hand and power tools, cut stock, apply construction mathematics, and interpret blueprints. Students will become proficient in identifying types of residential construction components to form foundations and frame walls, floors, ceilings, roofs, doors, and windows. All students will obtain the required OSHA 10 safety credential. Students will be instructed utilizing the NCCER Apprenticeship post-secondary education curriculum. If a student passes all assessments within the core and carpentry modules, they will complete one year of the NCCER post-secondary apprenticeship education program and earn two high school industry credentials. Students will also be provided with the opportunity to obtain CPR/First Aid certification.

TS125 Carpentry II
Grade 12 - Year - 3 Credits
Prerequisite: TS124
Carpentry II leads to successful transition into postsecondary education for careers in carpentry and related fields such as construction management, architecture, and others. Students are taught the safe use of hand and power tools common to the industry to complement their OSHA 10 safety credential earned in Carpentry I. Students will become proficient in assembling and installing various types of residential construction components that are current with industry standards, including rigging and job-estimating procedures, forming foundations, framing floors, walls, ceilings, roofs, trusses, roofing materials, stairs, exterior doors and windows, decks, and porches. Students may have the opportunity to complete this course through work-based learning.

TS126 Electricity I
Grade 11 - Year - 3 Credits
In Elecricity I, students develop skills in the installation, operation, maintenance, and repair of residential, commercial, and industrial electrical systems. They also study electrical theory, navigate the National Electrical Code Book, select and install conductors, and work with panelboards, switchboards, and generators. All students will obtain the required OSHA 10 safety credential. Students will be instructed utilizing the NCCER Apprenticeship post-secondary education curriculum. If a student passes all assessments within the core and electricity modules, they will complete one year of the NCCER post-secondary apprenticeship education program and earn two high school industry credentials. Students will also be provided with the opportunity to botain CPR/First Aid certification.

TS127 Electricity II
Grade 12 - Year - 3 Credits
Prerequisite: TS126
Students continue to develop skills in the installation, operation, maintenance, and repair of residential, commercial, and industrial electrical systems. They also study electrical theory and mathematical problems related to electricity, navigate the National Electrical Code Book, select and install conductors, examine lighting, communication, and power systems, and work with conduit and raceways, panel boards, switchboards, grounding systems, and generators. Students may have the opportunity to complete this course through work-based learning.

Summer School eLearning

ONLINE COURSE OFFERINGS

Hanover eLearning is available to resident and non-resident students during the 2017 summer session.

All courses require that mid-term and final exams be taken in a face-to-face format. The 2017 summer school term will run from June 26 through August 4, 2017.

Current summer school offerings include:

COURSE	REQUIRED FACE-TO-FACE SESSIONS (IN ADDITION TO MID-TERM AND FINAL EXAMS)	ADDITIONAL INFORMATION
Algebra I	**Weekly help sessions required if student grade falls below a "C" in the course.** *Weekly help sessions available to all students.*	**Not recommended for students taking Algebra I for the first time.**
Geometry	**Weekly help sessions required if student grade falls below a "C" in the course.** *Weekly help sessions available to all students.*	
English 9	**Two writing conference dates.** **Weekly help sessions required if student grade falls below a "C" in the course.** *Weekly help sessions available to all students.*	
Economics & Personal Finance	**Weekly help sessions required if student grade falls below a "C" in the course.** *Weekly help sessions available to all students.*	
World History I	**Weekly help sessions required if student grade falls below a "C" in the course.** *Weekly help sessions available to all students.*	
Government	**Weekly help sessions required if student grade falls below a "C" in the course.** *Weekly help sessions available to all students.*	
Spanish I	**Weekly help sessions required if student grade falls below a "C" in the course.** *Weekly help sessions available to all students.*	
French I	**Weekly help sessions required if student grade falls below a "C" in the course.** *Weekly help sessions available to all students.*	
Health & PE 9	**Weekly face-to-face sessions required, Tuesdays from 1:30 - 3:30 pm**	
Health & PE 10	**Weekly face-to-face sessions required, Wednesdays from 1:30 - 3:30 pm**	

Students should discuss eLearning with their school counselor and parents to ensure that their personality and work habits translate to success in the eLearning environment. Successful eLearning students are self-directed and independent learners, actively participate in all online activities, effectively manage their time to meet class deadlines, have strong reading comprehension skills, and are proficient with the use of technology. Students should consider the following questions prior to registering for an eLearning course:

- **Am I self-motivated and disciplined?**
  Students should be prepared to devote as much time to the eLearning course as would be expected in a face-to-face classroom course.

- **Am I receptive to information through written or visual context as opposed to spoken communication with an instructor?**

Registration information for summer eLearning will be available by spring 2017. For more information on eLearning, contact Heather Causey (hcausey@hcps.us)

Opportunities for College Credit

To increase probability of success in AP, IB and college courses the following steps are necessary:

- Find out more about each course by talking to the teacher and reviewing course syllabus, course objectives, and expectations.
- Receive teacher recommendation for the course.
- Have a cumulative grade point average of "C" or above.
- Be prepared to analyze and evaluate objectively student's own products (writing, research projects, etc.) and works by peers and experts.
- Assume responsibility for comprehension of advanced level reading materials and writing from various vantage points in a number of styles for a variety of purposes.
- Understand that the pace of a college credit bearing class is faster than that of other courses.
- Consider the application for the course content to student's future plans.
- Be aware that success in more advanced courses enhances the chances of being accepted by colleges and universities and also being prepared to do college/university level work.

The Reynolds Advance College Academy

The Reynolds Advance College Academies (ACA) provide outstanding high school students the opportunity to earn an associate degree while completing the requirements for their high school diploma. We have carefully selected and sequenced the college curriculum and courses in the program in order to satisfy the requirements of the high school diploma and associate degree at the same time.

Students will apply to an ACA in the 8th grade, enroll in advanced high school courses in the 9th grade, and take the required college coursework for the associate degree during the 11th and 12th grade. Students in the ACA program are required to attend a five-week session of college courses during the summer between their sophomore and junior year.

Advanced Placement Programs

Because of the very challenging course content and time necessary to complete assignments, students and parents/guardians should select Advanced, Advanced Placement (AP), and college courses advisedly. Advanced Placement (AP) courses are offered in Hanover high schools in the areas of Biology, Calculus, English, History, Computer Science, Statistics, Chemistry, Fine Crafts, Art Heritage, Music Theory, Psychology, and Physics. Sufficient enrollment (minimum of 10 students) is required for an Advanced Placement course to be offered. The AP courses are taught at the college level and follow the syllabus developed by the College Board. The AP Examination is an option, not a requirement, for students. Through a satisfactory score on an Advanced Placement (AP) Examination, a student may earn college credit. Examinations are given at the individual schools in May according to a testing schedule and fee requirements established by the College Board. Students who want to take Advanced Placement exams and need to request financial assistance for the testing fees should make an appointment to meet with the principal to discuss the request.

Students are encouraged to consider the following potential benefits of completing Advanced Placement (AP) courses and taking the AP Examination.

- Exemption, by decision of the college or university, from beginning courses and permission to take higher level courses
- College credit for acceptable score on AP Examination, as determined by the college or university
- Tuition savings
- Consideration at the college level for honors and other special programs open to students who have received AP recognition

International Baccalaureate Program

The International Baccalaureate (IB) Program is a demanding pre-university course of study for students in grades 11 and 12 that leads to examinations. It is designed for highly motivated eleventh and twelfth grade students. The program has earned a reputation for rigorous assessment, giving IB Diploma holders access to the world's leading universities.

The International Baccalaureate Organization's Diploma Program was created in 1968. The program was born of efforts to establish a common curriculum and university entry credential for students moving from one country to another. International educators were motivated by practical considerations but also by an idealistic vision. They believed that students should share an academic experience that would emphasize critical thinking, intercultural understanding, and exposure to a variety of points of view.

The two-year curriculum allows students to earn the International Baccalaureate Diploma, which fulfills requirements in a number of countries. Students who successfully complete IB courses and examinations but do not seek the IB diploma may qualify for IB course credits, which also receive international recognition.

Diploma candidates will choose one course from each of the first five groups and one additional course from either group six or groups one through five. Students thus are able to explore some subjects in depth and others more broadly. The science oriented student is challenged to learn a foreign language and the natural linguist becomes familiar with laboratory procedures. Active citizenship and global perspectives are encouraged in each area of the curriculum.

Each HCPS high school is an IB World School, separate from each other. Course offerings vary at each school and are based on student requests and enrollment.

The subjects are continually reviewed and revised to meet contemporary needs. The list below serves as a current guide.

GROUP 1 - STUDIES IN LANGUAGE AND LITERATURE
Students will study literature, including selections of literature in translation. Students will choose to study their Group 1 subject(s) in a language in which they are academically competent. The range of texts studied in language A courses is broad, and students grow to appreciate a language's complexity, wealth and subtleties in a variety of contexts. A specific aim is to engender a lifelong interest in literature and a love for the elegance and richness of human expression.

- **English HL-A IB**
- **English HL-B IB**

GROUP 2 - LANGUAGE ACQUISITION
The main emphasis of the modern language courses is on the acquisition and use of language in a range of contexts and for different purposes while, at the same time, promoting an understanding of another culture through the study of its language. The language acquisition courses are designed to provide students with the necessary skills and intercultural understanding to enable them to communicate successfully in an environment where the language studied is spoken. The Latin course focuses on the study of the language, literature and culture of the classical world.

- **French SL-A IB**
- **French SL-B IB**
- **Latin SL-A IB**
- **Latin SL-B IB**
- **Spanish SL-A IB**
- **Spanish SL-B IB**
- **German SL-A IB**
- **German SL-B IB**

GROUP 3 - INDIVIDUALS AND SOCIETIES
Studying any one of the Group 3 subjects provides for the development of a critical appreciation of human experience and behavior, the varieties of physical, economic and social environments that people inhabit and the history of social and cultural institutions. In addition, each subject is designed to foster in students the capacity to identify, to analyze critically and to evaluate theories, concepts and arguments relating to the nature and activities of individuals and societies.

- **History of the Americas HL-A IB**
- **History of the Americas HL-B IB**
- **Philosophy SL IB**
- **Information Technology for Global Society SL IB**
- **Psychology SL IB**
- **Psychology HL-A IB**
- **Psychology HL-B IB**
- **Economics SL IB**

GROUP 4 - SCIENCES
Students explore the concepts, theories, models and techniques that underpin each subject area and through these develop their understanding of the scientific method. A compulsory project encourages students to appreciate the environmental, social and ethical implications of science. This exercise is collaborative and interdisciplinary and provides an opportunity for students to explore scientific solutions to global questions. Computer science is an elective subject in Group 4.

- **Chemistry SL IB**
- **Chemistry HL-A IB**
- **Chemistry HL-B IB**
- **Biology SL IB**
- **Biology HL-A IB**
- **Biology HL-B IB**
- **Physics SL IB**
- **Computer Science SL IB**
- **Computer Science HL-A IB**
- **Computer Science HL-B IB**
- **Design Technology SL IB**

GROUP 5 - MATHEMATICS
The three Mathematics options serve to accommodate the range of needs, interest and abilities of students, and to fulfill the requirements of various university and career aspirations. The aims of these courses are to enable students to develop mathematical knowledge, concepts and principles, develop logical, critical and creative thinking, and employ and refine their powers of abstraction and generalization. Students are also encouraged to appreciate the international dimensions of mathematics and the multiplicity of its cultural and historical perspectives.

- **Math Studies SL IB**
- **Mathematics SL IB**
- **Mathematics HL-A IB**
- **Mathematics HL-B IB**

GROUP 6 - THE ARTS
It is a requirement of the programme that students choose one subject from each of the academic Groups 1–5. Alongside these live courses, a students can choose to study a Group 6 subject, or to study an additional subject from Groups 1–5. The subjects in Group 6 allow a high degree of adaptability to different cultural contexts. The emphasis is on creativity in the context of disciplined, practical research into the relevant genres. In addition, each subject is designed to foster critical, reflective and informed practice, help students understand the dynamic and changing nature of the arts, explore the diversity of arts across time, place and cultures, and express themselves with confidence and competence.

- **Music IB**
- **Visual Arts SL IB**
- **Visual Arts HL-A IB**
- **Visual Arts HL-B IB**
- **Film SL IB**
- **Film HL-A IB**
- **Film HL-B IB**
- **Theory of Knowledge (TOK) A-IB**
- **Theory of Knowledge (TOK) B-IB**

Assessing student work and awarding the diploma

Every IB student's work is assessed by the classroom teachers and examiners worldwide. Each subject is graded on a scale of 1 to 7. To receive the IB diploma, a student must meet defined standards and conditions, including a minimum total of 24 points for the six content areas and a passing score on the Extended Essay. In addition, the diploma candidate must complete a 4,000 word (maximum) extended essay, the Theory of Knowledge (TOK) course, and the required Creativity, Action, and Service (CAS) activities. The maximum score of 45 includes three points awarded for an exceptional extended essay or outstanding work in TOK.

Exams are mandatory. Students enrolled in IB courses are required to take the IB exam.

Dual Enrollment Options

Dual enrollment is a plan which allows high school students to meet the requirements for high school graduation while simultaneously earning college credit.

HIGH SCHOOL CAMPUS PROGRAMS AND CLASSES

The principal's approval is required to enroll in dual enrollment courses. Application forms for dual enrollment courses must be completed to begin the registration process. See the dual enrollment counselor in your school for details about application, placement tests, fees, and other information. Many dual enrollment courses are taught at Hanover High School. Placement testing and other required testing for college programs must be completed by May 15 preceding the fall semester during which students will take the courses and scores are reported to the dual enrollment counselor. Six semester credits in a college course must be completed successfully to earn one (1) Carnegie Unit credit toward graduation requirements.

COLLEGE CAMPUS PROGRAMS

The benefits for students are a smoother transition from high school to college, elimination of course duplication, cost savings, and the beginning of a career progression. High school students may request permission to enroll in certain courses at Reynolds Community College, Randolph Macon College, and Virginia Commonwealth University. Eligible students may take one or several of the courses depending on age requirements, academic performance, acceptance to the school, college or university, and success on the college placement tests. Students may acquire application forms and information about the process from the school counseling office. Students must do the following to enroll in dual enrollment classes and to remain eligible:

- Complete the necessary application forms.
- Complete all placement tests for college, generally in the spring before Fall enrollment.
- Pay in full the total cost for tuition (fee schedules will be provided to the schools as soon as they are available), books/supplies, transportation, and activity fees in order to enroll in college courses.
- In order to continue in a second semester course the student must receive a final first semester grade of "C" or better. Any student who does not receive a final grade of "C" or better during each semester must meet with a counselor for schedule revision in order to enroll in the next semester of high school courses.
- Students must complete and receive passing grades on two dual enrollment semester classes (6 semester credits) to earn one Carnegie Unit of credit.
- Students and parents are advised that the student will receive only unweighted high school credit for any dual enrollment course in which the final grade is a "D." Students or parents who have questions may contact the principal or the Director of Secondary Education.

Course offerings have been designed to meet the needs of Hanover County Public School students in planning their program of study. Decisions regarding classes to be taught each semester depend on student enrollment, availability of faculty, facilities, and financial resources. When an insufficient number of students has requested a course or when the appropriate teachers and/or facilities are not available, courses may not be available at every school. When this occurs, students will be given an opportunity to make alternate choices.

Students must complete all courses designated by the college to earn certifications or to meet transfer of credit requirements to other colleges.

In this Program of Studies, course numbers for Reynolds Community College courses are designated RCC; Longwood University are designated LU; Randolph- Macon College courses are designated R-MC; and Virginia Commonwealth University courses are designated VCU.

Requests for approval of these college courses for weighted credit must be submitted to the Administrator for Gifted and Talented no later than July 1 for the fall semester and December 1 for the spring semester. Requests submitted after this date will be returned. Students may obtain a Request for Approval form from their school counselor. The student completes Part I; the Parent or Legal Guardian completes Part II; the counselor completes Part III; the principal completes Part IV; and the Administrator for G/T and the appropriate Lead Teacher Specialist complete Part V. **Students and parents are advised that the student will receive only unweighted high school credit for any dual enrollment course in which the final grade is a "D."**

LONGWOOD UNIVERSITY
LUEPF Economics and Personal Finance Dual Enrollment
Grades 11 and 12 - Year - 1 Weighted Credit
Prerequisite: Algebra II and C or better in Advanced English 9 or 10
Dual Enrollment Economics and Personal Finance is an introductory college level course offered during the summer in an online module format. Students are required to attend the final course session on the campus of Longwood University in Farmville. The course is designed to familiarize the student with the application of mathematics for the individual in the role of a consumer and/or investor. Special attention will be given to mathematical formulas and their application to realistic situations in economics and finance, in particular personal finance. Topics will include banking, budgeting, credit, taxes, insurance, mortgages, automobile loans, annuities, and investments such as stocks and bonds. Consideration will be given to how changes in the macro and micro economic environment affect these topics. Emphasis is on interpretation of results and the effect on decision making. This course satisfies the requirements for both an online course and Economics and Personal Finance.

RANDOLPH-MACON COLLEGE
RMC01 College Preview Program
Grade 12 - Year - 1 Weighted Credit per 6 college semester hours
RMC02 College Preview Program
Grade 12 - Year - 1 Credit per 6 college semester hours

RMC03 College Preview Program
Grade 12 - Semester - 1/2 Weighted Credit per 3 college semester hours
RMC04 College Preview Program
Grade 12 - Semester - 1/2 Credit per 3 college semester hours

Through the cooperative efforts of the Hanover County School Division and Randolph-Macon College, qualified seniors are provided an opportunity to enroll in one course per semester approved by an admissions officer. Seniors who meet the established criteria may select from over 150 courses (some with prerequisites). Students receive college credit which may be transferred to most fully accredited colleges throughout the country. The only cost to students is a $35.00 application fee plus the cost of books.

Since 1983 Randolph-Macon College (R-MC) has permitted eligible high school seniors to take a tuition-free course each term at the College. Formal arrangements are made with the principal and director of school counseling services at participating high schools. Every effort is made to see that this initiative by R-MC is viewed as a desirable supplement to the educational program of the high school.

Rationale for College Preview Program:
- The range and depth of academic courses available to eligible students in surrounding counties will be greatly expanded. Over 150 additional courses (some with prerequisites) will be available to outstanding students who wish to enrich their learning opportunities while still in secondary school. Most of these college level courses and subjects are not offered at the secondary level.
- College Preview at Randolph-Macon provides opportunities for well-qualified students to obtain a preliminary experience with actual college courses while in high school. This experience may help to ease the transition for especially able seniors between secondary school and what may be very competitive academic environments at the colleges they choose.
- Qualified students may acquire up to the equivalent of one full semester's worth of college credits which will be portable throughout the country—thus enabling the student to accelerate progress toward a baccalaureate degree or to reduce the pressure of an intensive college course load for one or more semesters.
- College Preview is offered by Randolph-Macon College as a service to the community. It is intended as a supplement to, not a substitute for, the regular education program of the high school.

Eligibility Guidelines:
- High school seniors (or rising seniors)
- Recommended by endorsement from a school counselor/ principal
- Minimum class standing - top 10%
- Combined SATs of 1090 or above

Selection Procedure:
- Simple application form (no fee), endorsed and dated by counselor
- Screened by an R-MC admissions officer
- Courses to be taken at R-MC should be in addition to courses taken in high school to satisfy requirements for a high school diploma.
- Courses to be taken at R-MC should not be offered (in substantial equivalence) at the high school unless the request is approved by signatures of both the guidance counselor and principal.
- Students must submit official high school transcripts including SAT/ PSAT scores.
- Students must have the requisite background to be approved for each course requested.

If accepted:
- Students may enroll in one course per semester as approved by an admissions officer—on a "space available" basis.
- $35 application fee each semester plus books are the only costs to the students for the first course.
- A second course per semester may or may not be approved (if requested) on a "space available" basis, depending on the student's qualifications and the particular course selected. The charge for the second course is the standard fee for part-time students: $350 per credit hour (3 credit hour course = $1,050).
- No more than two courses may be taken per semester.

VIRGINIA COMMONWEALTH UNIVERSITY
V0035 Visiting Students Program
Grades 11 and 12 - Year - 1 Weighted Credit per 6 college semester hours OR Semester - 1/2 Weighted Credit per 3 college semester hours
V0045 Visiting Students Program
Grades 11 and 12 - Year - 1 Credit per 6 college semester hours OR Semester - 1/2 Credit per 3 college semester hours

The Visiting Students Program (VSP) allows gifted high school students to choose and take courses from a multitude of disciplines at Virginia Commonwealth University. This program is designed so that students treat these courses as Advanced Placement-type classes. They earn high school credit and obtain a feel for being a student at a major university, thus increasing their college success rate.

Criteria:
- All completed applications must be submitted by the deadlines below:
  Fall Semester - July 1
  Spring Semester - December 1
  Applications received after the above mentioned deadlines will not be processed and will be returned.
- Students must be high school juniors or seniors. The number of participating students per high school will be limited.
- Students will not be allowed to attend classes on the MCV Campus or in the School of the Arts.

- Students must be nominated by the high school VSP coordinator, submit a completed VSP application, and send an up-to-date high school transcript with PSAT/SAT scores. A minimum score of 95 PSAT or 950 SAT is required.
- Students must take placement examinations in the areas of foreign language, math, English, and chemistry, if their intent is to enroll in these areas.
- No courses above the 200-level may be taken by a high school student unless special permission is granted by the department chairperson.
- The VCU program coordinator and the appropriate VCU department chairpersons will evaluate all applications. VCU reserves the right to deny any student admission to the program.
- If a class requested by the visiting student reaches its enrollment limit, the high school student will be withdrawn.
- VCU will provide each participating student with an ID, which will give the student full library privileges.

V0015 Advanced Scholars Program
Grades 11 and 12 - Year - 1 Weighted Credit per 6 college semester hours OR Semester - 1/2 Weighted Credit per 3 college semester hours
V0025 Advanced Scholars Program
Grades 11 and 12 - Year - 1 Weighted Credit per 6 college semester hours OR Semester - 1/2 Weighted Credit per 3 college semester hours

Qualified high school students from Richmond and surrounding area high schools may be permitted to enroll in college level courses at VCU concurrently while completing the high school diploma. Students may select courses of interest and upon successful completion of the courses may receive college credit. However, courses selected should not be available in the high school curriculum.

Candidates must be nominated and approved by the secondary school principal. A maximum of 100 candidates will be accepted for each term, and candidates may enroll for no more than two courses per semester.

As a guide to secondary schools, the following criteria for selection are considered:
- Each candidate must be nominated and approved by the secondary school principal.
- Each candidate must have achieved a total of 1180 points (math and critical reading sections) in the College Entrance Examination Board SAT (118 PSAT) and must have maintained a 3.2 grade point average.
- Each candidate must be a high school junior or senior.
- The desired courses to study must be available and appropriate.
- All parties should emphasize that tuition is charged for courses taken as an Advanced Scholar.

If the student plans to take a math course, s/he must take the VCU Math Placement Test. The student is required to contact the VCU Math Lab at 828-1320 to make arrangements to take the test and have the results sent to the Admissions Counselor in the Office of Undergraduate Admissions.

If the student plans to take a foreign language class above the 101-level, s/he must take the Foreign Language Placement Test. The student is required to contact the VCU Foreign Language Department at 828-2200 to make arrangements to take the test and have the results sent to Admissions Counselor in the Office of Undergraduate Admissions.

If the student plans to take a class within the School of the Arts, s/he must obtain written permission from the chairperson of the appropriate VCU School of the Arts department and have this permission sent to Admissions Counselor in the Office of Undergraduate Admissions.

Once these materials have been received and reviewed, candidates to the Advanced Scholars Program will be notified in writing of their admission decision. VCU reserves the right to deny any student who is not qualified admission to the program.

NOTES

NOTES

HANOVER COUNTY PUBLIC SCHOOLS

HIGH SCHOOLS:

Atlee High School
9414 Atlee Station Road
Mechanicsville, VA 23116
Dr. John Wheeler, Principal
723-2100

Hanover High School
10307 Chamberlayne Rd.
Mechanicsville, VA 23116
Ms. Kristina Reece, Principal
723-3700

Lee-Davis High School
7052 Mechanicsville Pike
Mechanicsville, VA 23111
Mr. Charles E. Stevens, Principal
723-2200

Patrick Henry High School
12449 W. Patrick Henry Road
Ashland, VA 23005
Ms. Beth Smith, Principal
365-8000

The Georgetown School
10000 Learning Lane
Mechanicsville, VA 23116
Mr. Brian Ford, Principal
723-3460

The Hanover Center For Trades & Technology
10002 Learning Lane
Mechanicsville, VA 23116
Mr. Justin Roerink, Principal
723-2020

MIDDLE SCHOOLS:

Chickahominy Middle School
9450 Atlee Station Road
Mechanicsville, VA 23116
Mr. Mark T. Beckett, Principal
723-2160

Liberty Middle School
13496 Liberty School Road
Ashland, VA 23005
Mr. Donald E. Latham, Principal
365-8060

Oak Knoll Middle School
10295 Chamberlayne Road
Mechanicsville, VA 23116
Ms. Caroline S. Harris, Principal
365-4740

Stonewall Jackson Middle School
8021 Lee Davis Road
Mechanicsville, VA 23111
Dr. Quentin Ballard, Principal
723-2260

All school and instructional department Web sites can be accessed by using Hanover County Public Schools' address **www.hcps.us**