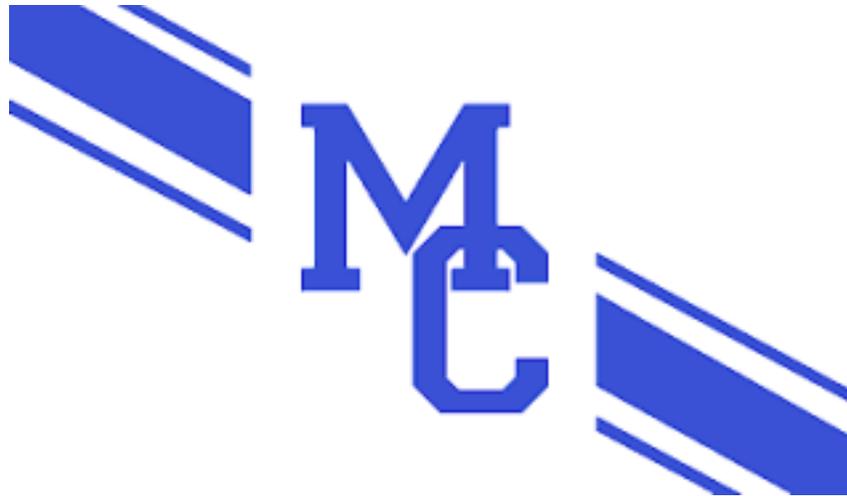


Madison County High School



Course of Studies

2022-2023

Ms. Betty-Jo Wynham

Principal

Mr. Joseph Lunsford

Assistant Principal

68 Mountaineer Ln.

Madison, VA 22727

(540) 948-3785

TABLE OF CONTENTS

COURSE REGISTRATION PROCESS	2
GRADUATION REQUIREMENTS	3
REPEATING A CLASS & AUDITING A CLASS	5
PROMOTION POLICY & GPA/RANK CALCULATION	6
VIRGINIA BOARD OF EDUCATION DIPLOMA SEALS	7
HIGH SCHOOL CREDIT EARNED IN MIDDLE SCHOOL	8
SCHEDULE CHANGE REQUESTS & EARLY GRADUATION	8
DUAL ENROLLMENT COURSE OFFERINGS - GERMANNA	9
ADVANCED PLACEMENT COURSES & VIRTUAL VIRGINIA ONLINE COURSES	11
BLUE RIDGE VIRTUAL GOVERNOR'S SCHOOL	12
NAVIANCE	12
HIGH SCHOOL INDUSTRY CREDENTIALING & CAREER AND TECHNICAL EDUCATION	13
WORK BASED LEARNING WITH CAREER & TECHNICAL EDUCATION	16
AGRICULTURAL EDUCATION	18
BUILDING TRADES	19
BUSINESS, INFORMATION TECHNOLOGY & MARKETING	20
ENGINEERING COURSES	23
FAMILY & CONSUMER SCIENCE	24
MOUNTAINEER TEACHER CADET ACADEMY	25
HEALTH SCIENCES	26
ENGLISH	28
HEALTH & PHYSICAL EDUCATION	31
MATHEMATICS	32
MUSIC	35
SCIENCE	36
SOCIAL STUDIES	38
WORLD LANGUAGES	40
VISUAL ARTS	42

GENERAL INFORMATION

This handbook contains information that will assist you in planning your high school education and career direction. It includes graduation requirements, sample four-year plans, course descriptions, explanations of special academic programs, career clusters, and other academic policies. We strongly encourage you to study this guide prior to registration and to consult your parents, school counselor and teachers in planning your course of study.

COURSE REGISTRATION

Teachers will place recommendations into PowerSchool for all students; parents and students are encouraged to use these recommendations to select courses for the following school year. Other courses are available to select; however, recommendations have been carefully and specifically determined for each student. We encourage conversations between teachers and families about the recommendations and for the course selection process. Students and parents are also encouraged to access the students' Academic Career Plan (ACP) in Naviance to see the plan that has been established with the school counselor. Parents should request classes and alternate classes using Parent Portal. If you are unable to access the Parent Portal please contact the MCHS School Counseling Office.

BLOCK SCHEDULING

Madison County High School follows a 4X4 block schedule. The school year is divided into two semesters (fall and spring), each approximately eighteen weeks long. During each semester, students take four classes (courses) which meet daily and are worth one credit each. This is an accelerated curricular program that permits students to earn thirty-two credits during their high school years. There are no study halls.

COURSES TAKEN OFF-CAMPUS TO INCLUDE VIRTUAL COURSES

In unique situations, students may have permission to enroll in community college courses through the joint enrollment program or online courses through an approved VDOE online provider. These courses are not considered dual enrollment courses and therefore are not weighted. Options for online and distance learning classes will be available to students through a request process, and will require evidence of previous success using an online and distant learning platform. Families requesting students to learn 100%

distantly, meaning not attending school in-person to earn academic credits for graduation should follow the procedures below. Students must have earned at least 6 credits the previous school year in order to be eligible to participate in off-campus virtual learning. Rising 9th graders should have passed their core classes through virtual learning to be eligible for participation.

The following procedures and permissions are required:

1. Meet with a high school counselor to discuss the intended course(s) and reasoning for requests.
2. Be on track for graduation with a minimum of 6 high school credits earned the previous school year, with at least one of those credits being an English course.
3. Receive administrative approval
4. Meet with Career Coach to understand the registration process (There is no tuition/fee assistance)
5. Student is responsible for turning in a copy of course registration
6. Student is responsible for turning in a transcript of final grades
7. Student daily attendance is tracked daily just as attendance is recorded daily for in-person learners. Students will be held to the same attendance standards, and will be directly supported by an Attendance Plan if necessary.
8. Students will be held accountable at the same level for keeping up with the pace of courses taught virtually. Extensions will not be granted for virtual learners that are not available to in person learners; therefore, final grades will be collected at the end of each nine weeks and at the end of each semester for all students.
9. Students who are approved to learn virtually off campus and are not showing adequate progress with their courses or with daily attendance may be required to return to in-person learning.

Please note that these courses will not be taught by a teacher at Madison County High School, but will be provided through an online course provider which the student will work through independently using online learning modules and activities. School Counselors will assist families with identifying required courses to stay on track for graduation, and can provide advisement.

GRADUATION REQUIREMENTS

The Virginia Board of Education has established criteria for graduation from high school. Regular education students can earn a Standard or Advanced Studies diploma. Students receiving services through Special Education have two additional options: a Standard Diploma with credit accommodations or an Applied Studies (formerly called an IEP diploma). Information about these diplomas is available from the student’s case manager.

The Virginia State Board of Education establishes the credit requirements for graduation. A standard unit of credit for graduation is based on a minimum of 140 hours of instruction plus successful completion of the requirements of the course. A verified credit is based on a minimum of 140 clock hours of instruction, successful completion of the requirements of the course, and a passing score on the end-of-course Standards of Learning (SOL) test for that course. There are alternate assessments that can be used to earn certain verified credits. This information is available through the counseling office as well as on the Virginia Department of Education website: www.doe.virginia.gov. The MCPS School Board may award locally verified credits in Science, History, Math and English that may be used to fulfill the requirement of verified credits of the student’s own selection. An administrative/faculty committee will review the student’s testing history and other required criteria before awarding a verified credit. Please contact a building administrator and/or school counselor for more information on locally verified credits.

High School End-of-Course SOL Tests	
Students will only take SOLS that are Required for Graduation	
English	Grade 11 Reading Grade 11 Writing (Multiple Choice & Short Paper)
Mathematics	Algebra I Algebra II Geometry
History/Social Science	World History & Geography to 1500 World History & Geography 1500 to Present U.S. & Virginia History
Science	Earth Science Biology Chemistry

MADISON COUNTY PUBLIC SCHOOLS’ POLICY – GRADUATION REQUIREMENTS

The Commonwealth of Virginia, through the Standards of Learning (SOL) and Standards of Accreditation, has set a goal for academic achievement for all students in public schools. Madison County High School aspires to reach these goals by encouraging each student to develop his or her full potential. A variety of elective courses and co-curricular activities are offered to students. Participation in these activities and courses enables students to have a balanced curriculum that assists them in creativity, critical thinking, communication, collaboration, and citizenship for lifelong learning. All students shall complete credits in core academic and elective courses to satisfy graduation requirements.

Twenty-two credits are required for the Standard Diploma and twenty-six credits are required for the Advanced Studies diploma. Students are expected to carry a full schedule of four courses in each semester. Students will be enrolled in only one required core course (English, Social Studies, Math, and Science course per year. However, accommodations may be made for students on a case-by-case basis.

CREDIT REQUIREMENTS FOR AWARDING OF A HIGH SCHOOL DIPLOMA

Course Requirements	Advanced Studies		Standard	
	Standard units of credit	Verified units of credit	Standard units of credit	Verified units of credit
English – 9, 10, 11, and 12	4	2	4	2
Mathematics – Courses shall include at least two different course selections from among Algebra I; Geometry; Algebra, Functions and Data Analysis; Algebra II; or other mathematics courses above the level of Algebra II (Standard Diploma) or at least three different course selections from among Algebra I, Geometry, Algebra II, or other mathematics courses above the level of Algebra II (Advanced Studies Diploma).	4	1	3	1
Laboratory Science – Courses shall include at least two different course selections from among Earth Science, Biology, Chemistry, or Physics (Standard Diploma). The Advanced Studies Diploma requires at least three different course selections from among Earth Science, Biology, Chemistry, or Physics.	4	1	3	1
History and Social Sciences – Courses shall include U.S. and Virginia History, U.S. and Virginia Government, and one (Standard Diploma) or both (Advanced Diploma) of the following: World History to 1500; World History from 1500; World Geography may be accepted as one of the required courses for the Advanced Studies diploma for transfer students.	4	1	3	1
World Language Courses – Courses shall include three years of one language or two years each of two languages.	3			
Health/Physical Education	2		2	
Economics and Personal Finance	1		1	
Fine Arts or Career and Technical Education	1			
World Language or Fine Arts, or Career and Technical Education – Credits earned shall include one credit in either fine and performing arts or career and technical education.			2	
Electives – Courses to satisfy this requirement shall include at least two sequential electives	3		4	
TOTAL CREDITS REQUIRED	26	5	22	5
ADDITIONAL REQUIREMENTS	* Virtual Course (Credit or Non-Credit) * CTE Credential OR One Adv. Course OR WBL Experience * CPR/First Aid and AED Training			

Other Diplomas & Certificates

Applied Studies Diploma	For students with disabilities who meet the requirements of their IEP.
Individual Student Alternative Education Plan	For students who are between the ages of 16-18, who meet specific criteria and pass the high school equivalency exam. Note: ISAEP completers do not walk at the MCHS high school graduation program, an alternate ceremony is available upon request.

COURSE LOAD

All students are expected to carry the normal load of classes required to meet the minimum standards necessary for graduation. Exceptions may be made for some students whose program of study includes an off-site placement. Students may leave school early on a daily basis only if they have enrolled in:

1. A work based learning co-op program that awards high school credit through the MCHS Career and Technical Education department; or
2. A program for special needs students that includes job skills and work experience; or a post-secondary course/program not offered at MCHS.
3. An approved Release

REQUIREMENTS FOR GRADUATION

The revised regulations reduce the number of SOL tests students must pass to earn a high school diploma — while maintaining high expectations for learning in English, math, science and history/social science — and implement the “Profile of a Virginia Graduate,” a set of skills and attributes identified by employers and higher education as critical for success in the workplace and in college. The new graduation requirements place increased emphasis on the practical application of learned skills and content knowledge by expanding the use of performance-based assessments for the awarding of verified credits. In addition, the career-planning component of the new graduation requirements provides the opportunity for students to learn about employment options aligned with their interests in their own communities and elsewhere. While there is no specific activity that a student must experience to graduate, Madison County Public Schools will collaborate with local employers to create opportunities for students to learn about the workplace expectations, regardless of their plans after high school. Madison County High School will provide opportunities for students to understand and demonstrate civic responsibility and community engagement.

Key points for students and parents to remember about how Virginia’s diploma standards are changing include the following:

- The new graduation requirements are effective with students entering the ninth grade in the fall of 2018 (Class of 2022).
- Under the new requirements, the number of required standard credits for a Standard Diploma remains the same (22) but the number of required verified credits is reduced from six to five (one each in English reading, English writing, mathematics, science and history/social science).
- Under the new requirements, the number of standard credits required for an Advanced Studies Diploma remains the same (26) but the number of required verified credits is reduced from nine to five (one each in English reading, English writing, mathematics, science and history/social science).
- School divisions, on a local-option basis, may offer an authentic performance-based assessment as an alternative to the English writing SOL test for the awarding of verified credit.

REPEATING A COURSE

Students wishing to repeat a course previously passed should request such through their school counselor. While both attempts will appear on the transcript, the final grade (to be calculated in GPA and rank) associated with the credit earned will be an average of the two attempts. For the repeat of courses due to an initial failure, all attempts are included in GPA and class rank.

AUDIT POLICY

Students seeking an audit for a class must meet with their counselor to discuss the request and the audit process. Audit requests will be reviewed on a case by case basis and are reserved for extenuating circumstance situations. For example, a student transferring in with enrollment at the prior school in courses not offered at MCHS would possibly require an approved audit. Courses audited do not receive final credit, nor a grade to be calculated in GPA or class rank.

PROMOTIONS

Student promotions are made once a year in June, after final grades are received. (With the exception of approved Early Graduates, who are promoted to senior status after the 1st semester of their 3rd year of high school).

To move from 9th grade to 10th grade, a student must have earned 5 credits including 3 core credits.

To move from 10th grade to 11th grade, a student must have earned 11 credits including 6 core credits.

To move from 11th grade to 12th grade a student must have earned enough credits to enable him or her to complete any remaining courses in time to graduate by May of the upcoming school year.

(Core classes are defined as English, math, science, social studies and health/PE)

WEIGHTED COURSE POLICY

If a community college course replaces a graduation required course that is weighted, then the community college course will also be weighted in the student's MCHS GPA. Any community college course or off campus online course that is not listed in the MCHS Course of Studies as a weighted course will not be weighted.

GRADE POINT AVERAGE (GPA) CALCULATION

The final grade for each course is a letter grade. This letter grade is assigned a point value that is used in computing a student's grade point average. The total number of points earned divided by the total number of courses taken determines the GPA. The grades of WP (withdraw-pass) and WF (withdraw-fail) are not used in calculating the GPA.

Additionally, courses that receive a P (pass) for a grade are not figured into the GPA. For any course that a student repeats, the better of the two grades will be used in calculating the GPA. Students receiving an incomplete grade for the nine weeks grading period and/or semester grade have one week to contact the teacher to arrange for make-up work.

Marking System

A+ = 100 - 99 B+ = 89 - 87 C+ = 79 - 77 D+ = 69 - 68 F = 64 - 0 A = 98 - 93 B = 86 - 83 C = 76 - 73 D = 67 - 66
A - = 92 - 90 B - = 82 - 80 C - = 72 - 70 D - = 65

Letter grades are converted to the following numerical values:

GPA Computation

A+ = 4.3 (5.3)* B+ = 3.3 (4.3) C+ = 2.3 (3.3) D+ = 1.3 F = 0 A = 4.0 (5.0) B = 3.0 (4.0) C = 2.0 (3.0) D = 1.0
A - = 3.7 (4.7) B - = 2.7 (3.7) C - = 1.7 (2.7) D - = 0.7

*For **weighted classes**, letter grades of C – or higher are assigned either an additional point or half-point depending on the level of class. Honors, Dual Enrollment, Advanced Placement and upper level mathematics, sciences, and world languages are weighted courses. **Students taking AP Courses must take the AP exam to earn the weighted credit.** Students in DE courses must pass with at least a C to receive weighted credit. Courses receiving a full-point of weighting are designated with a superscript W following the course number. Courses receiving a half-point weighting are designated with a superscript HW.

Class rank is determined using the student's GPA and comparing it to the GPA's of all other students in that grade level. Class rank is only calculated senior year. Three times, in August, January and May.

Progress Reports are issued at the midpoint day of each nine (9) weeks to inform parents and students of their current academic status in each class. Parents are asked to review the report and contact the teacher with any concerns.

Report Cards are distributed to the student approximately five (5) school days after the end of the nine (9) weeks.

VIRGINIA BOARD OF EDUCATION DIPLOMA SEALS

Recognition of Outstanding Academic Performance

Students who demonstrate academic excellence and/or complete additional requirements may be eligible for one or more of the following awards:

The **Governor's Seal** is awarded to students who complete the requirements for an Advanced Studies Diploma with an average grade of "B" (GPA 3.0) or better, and successfully complete at least nine (9) transferable college credits in Advanced Placement courses and/or dual enrollment courses.

The **Board of Education Seal** is awarded to students who complete the requirements for a Standard or an Advanced Studies Diploma with an average grade of "A" (4.0).

The **Board of Education's Career and Technical Education Seal** will be awarded to students who earn a Standard 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" (GPA 3.0) or better in those courses; **or**

- (i) Pass an examination or an occupational competency assessment in a career and technical education concentration or specialization that confers certification or occupational competency credential from a recognized industry, trade, or professional association; **or**
- (ii) Acquire a professional license in that career and technical education field from the Commonwealth of Virginia. The Board of Education must approve all professional licenses and examinations used to satisfy these requirements.

The **Board of Education's Seal of Advanced Mathematics and Technology** will be awarded to students who earn a Standard or Advanced Studies Diploma and satisfy all of the mathematics requirements for the Advanced Studies Diploma (four (4) units of credit including Algebra II; two verified units of credit with a "B" (GPA 3.0) or better; and accomplish one (1) of the following three options:

- (i) Pass an examination in a career and technical education field that confers certification from a recognized industry, or trade or professional association; **or**
- (ii) Acquire a professional license in a career and technical education field from the Commonwealth of Virginia **or** (iii) Pass an examination approved by the Board that confers college-level credit in a technology or computer science area. The Board of Education must approve all professional licenses and examinations used to satisfy these requirements.

The **Board of Education Seal for Excellence in Civics Education** will be awarded to students who meet the following criteria:

- (i) Earn a Standard or an Advanced Studies diploma **and**
- (ii) Complete VA/US History and VA/US Government courses with a grade of "B" or better **and** (iii) Have good attendance and no disciplinary infractions as determined by local school board policy **and** (iv) Complete 50 hours of voluntary participation in community service or extracurricular activities:
 - (a) Volunteering for charitable or religious organizations that provide services to the poor, sick, or less fortunate;
 - (b) Participating in Boy Scouts, Girl Scouts, 4-H or similar youth organizations;
 - (c) Participating in political campaigns, government internships, Boys/Girls State, or Model General Assembly;
 - (d) Participating in school-sponsored extracurricular activities that have a civic focus
 - (v) 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** certifies attainment of a high level of proficiency by a graduating high school student in one or more languages in addition to English, and certifies that the graduate meets of the following criteria: The Board of Education's Seal of Biliteracy will be awarded to students who earn either 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; (ii) Be 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.

[For purposes of this article, "foreign language" means a language other than English, and includes American Sign Language.]

The **Board of Education's Seal for Excellence in Science and the Environment** shall be awarded to students who earn either a Standard Diploma or Advanced Studies Diploma and

- (i) complete at least three different first-level board-approved laboratory science courses and at least one rigorous advanced-level or postsecondary-level laboratory science course, each with a grade of "B" or higher; (ii) (ii) complete laboratory or field-science research and present that research in a formal, juried setting; and (iii) (iii) complete at least 50 hours of voluntary participation in community service or extracurricular activities that involve the application of science such as environmental monitoring, protection, management, or restoration.

HIGH SCHOOL CREDIT AWARDED AT MIDDLE SCHOOL

Grades and credits earned in middle school for high school credit-bearing courses will count toward graduation credits. Credit and the grade will be calculated in the high school GPA unless the parent/guardian requests to have the grade expunged from the child's record. Written request must be submitted to the school counseling office by June 30th prior to 9th grade year. If a parent wishes, a student who took a high school credit class as a middle school student may re-enroll in the course for which the grade and credit were deleted to earn a higher grade. If the student's deleted final grade is a "C" or better with a passing score on the accompanying SOL test (if applicable), the student may proceed to the next level of the course without the grade or credit for the prerequisite course. Credits earned during middle school allow a student to pursue more rigorous courses in all core areas, foreign languages, and CTE and Fine Arts programs at MCHS.

SCHEDULE CHANGE REQUESTS

Schedule change requests are accepted and reviewed twice a year. Once at the beginning of 1st semester and again at the beginning of 2nd semester. The counseling office has forms and further information on deadlines. Schedule change requests are not allowed past the deadline. Requests are reviewed in the order they are received by a committee consisting of administrators and counselors. Many variables are considered, including class sizes, recommendations, staffing requirements and course requests.

EARLY GRADUATION

Students/Parents/Guardians may request early graduation approval spring of their 10th grade year. Students approved to graduate early would start their 3rd year of high school as a junior, being promoted to senior status upon satisfactory completion of 1st semester courses. Please see your school counselor for more information.



Dual Enrollment Classes

*Madison County High School
DE offerings in partnership with
Germanna Community College*

Dual Enrollment (DE) is a unique enrichment program in which high school junior and senior students are given the opportunity to take college courses in their own high school through Germanna Community College's program. DE courses hold the same rigor as any other college level course. Students are expected to perform at the same level as their college student counterparts participating in the same course. Credits generally transfer to all Virginia Community Colleges and most Virginia colleges and universities. Courses are taught by high school instructors who have the qualifications to teach at the college level.

Course	GCC Course	Grade Level	MCHS Credit	GCC Credit	MCHS Class Equivalent
Chemistry	CHEM 111	11-12	1	4	Science Credit/Elective
Geology	GOL 105	11-12	1	4	Science Credit/Elective
VA/US History	HIS 121-122	11	1	6	VA/US History
College Composition	ENG 111-112	11-12	1	6	English 11 or English 12
College Literature	ENG 245-246	12	1	6	English 12
Pre-Calculus	MTH 161-162	11-12	1	6	Math Credit/Elective
Statistics	MTH 245	11-12	1	3	Math Credit/Elective
Calculus I	MTH 263	12	1	4	Math Credit/Elective
Intro to Business	BUS 100	11-12	1	3	Elective
Principles of Supervision	BUS 111	11-12	1	3	Elective
Teachers for Tomorrow I	EDU 200	11-12	1	3	Elective
Teachers for Tomorrow II	EDU 207	12	1	3	Elective

Tuition for Dual Enrollment is determined by Germanna Community college in August prior to the start of the school year. Once tuition has been determined the students will receive payment information at the start of the semester in which the class(es) are taken in. Tuition can be paid in full or with three monthly installments.

In cases where the Dual Enrollment tuition is considered a financial hardship, parents/guardians are asked to notify the School Counseling Department at MCHS directly, and the counselor will provide the parent with the request for a tuition assistance form to be submitted to the Assistant Superintendent. MCPS will pay all or part of Dual Enrollment tuition if support is deemed necessary.

For more information, please contact the MCHS School Counseling office at 540-948-3785.

DUAL ENROLLMENT COURSES

<https://www.germannanna.edu/career-and-transfer/>

Prospective students must:

- 1] Discuss Dual Enrollment options and intention with your school counselor
- 2] Complete the on-line GCC Application for Admissions at <https://apply.vccs.edu/app/app.htm>
- 3] Obtain your GCC student ID number and report it to MCHS counselor
- 4] Ensure DE qualification with your MCHS School Counselor or the MCHS Career Coach via GCC Multiple Measures Criteria or qualifying Virginia Placement Test scores
- 5] Sign up for the desired DE course during MCHS' course registration (via Parent Portal)
- 6] Electronically sign (student and parent) the enrollment agreement emailed to student and parent late spring/early summer

Once a student is enrolled in a dual enrollment class at MCHS:

- Students will earn high school and Germanna Community College credit upon completion of the course with a passing grade of D- or higher. Students must earn a C or better in a DE course for it to be considered for college transfer credit. Please note that certain DE courses require a C or better to continue to the next level.
- Students will pay tuition for the course (The Madison County School Board pays a portion of each student's fee and provides the textbook). Payment in full or the 1st payment of a 3 month billing plan is due at the end of the 1st month of school in which the student is taking the course. Failure to submit payment or develop an approved payment plan after the second week of the course will result in a drop and dual-enrollment credit will not be available. A student will not be denied the opportunity to participate in this program if able to provide documented financial need. Tuition will not be refunded if a student does not receive a passing grade for each course.
- The student's tuition responsibility in the **2021-2022 school year for a three credit course was \$165.75**. 2022-2023 tuition will not be available until August 2022.
- Academic dual enrollment courses are weighted on the grading scale (if C- or higher) and are marked with a DE on the transcript.
- Students who earn grades in dual enrollment courses will have a permanent transcript and GPA at GCC. Students must request from GCC to have their transcript sent to any colleges or other institutions.

Course Type	High School Transcript (weighted or unweighted)		SAT		PSAT		ACT		VPT
Transfer Courses (except Math)	Current cumulative high school GPA of 3.0 or higher	or	ERW score of 480 or higher	or	ERW score of 390 or higher	or	18 or higher on both English and Writing subject area tests	or	Placement into ENG 111
Career and Technical Courses (except Math)	Current cumulative high school GPA of 2.0 or higher	or	ERW score of 480 or higher	or	ERW score of 390 or higher	or	18 or higher on both English and Writing subject area tests	or	Placement into ENF 1 or higher
MTH 101- 133	Current cumulative high school GPA of 3.0 or higher and a 2.0 (C) grade or higher in high school math course	or	ERW score of 480 or higher and Math score of 530 or higher	or	ERW score 390 or higher and math score of 500 or higher	or	22 or higher on Math subject area test	or	Placement in MTH 111 or higher (Satisfaction of MTE 1-3)
MTH 154,155	Current cumulative high school GPA of 3.0 or higher and a 2.0 (C) grade or higher in a high school math course	or	ERW score of 480 or higher and Math score of 530 or higher	or	ERW score of 390 or higher and math score of 500 or higher	or	22 or higher on Math subject area test	or	Placement in MTH 154 or higher (Satisfaction of MTE 1-5)
MTH 161,167 Individual colleges may establish criteria for direct placement into calculus or other high level math course	Current cumulative high school GPA of 3.0 or higher and a 2.0 (C) grade or higher in Algebra 2 or in a higher level math course	or	ERW score of 480 or higher and Math score of 530 or higher	or	N/A	or	22 or higher on Math subject area test	or	Placement into MTH 161 or higher (Satisfaction of MTE 1-9)

ADVANCED PLACEMENT COURSES

Advanced Placement (AP) Courses offer students an opportunity to do college-level work. AP courses are offered through an agreement with the Education Testing Service. These are courses with a standardized curriculum that generally matches the introductory level in the subject area at the college level. In order for a college to award credit, students must take the AP exam after successfully completing the course. Exams are scored on a scale of 1 - 5. Most colleges accept scores of a 3 or higher for college credit. *Additional AP courses are offered through **Virginia's Virtual Advanced Placement School** (distance learning). Students may be responsible for the cost of the AP exam (pending annual funding). See your school counselor for deadlines and further information regarding Virtual Virginia.

ADVANCED PLACEMENT EXAMS

Advanced Placement exams are given in May in accordance with the schedule established by the College Board. **Students enrolled in AP courses must take the AP exam(s) in order to earn weighted credit.** MCPS paid AP exam fees for the 2021-2022 school year, funding for future AP exam payments is pending future annual budgets. In addition, any student, who feels qualified, may take an AP exam without taking the course, but will pay the full exam fee. More information is available through the counseling office and the College Board website: <https://apstudent.collegeboard.org>

VIRTUAL VIRGINIA ADVANCED PLACEMENT SCHOOL - VIRTUAL LEARNING

Virginia Virtual Advanced Placement School provides a variety of on-line college-level courses, enabling Virginia students to earn college credit. Each AP course is weighted provided that the student takes the AP exam. Course selections can be found at: www.virtualvirginia.org The courses utilize video segments, audio clips, whiteboard and online discussions, as well as text lessons. Teachers are available for telephone conversations with students during office hours. Courses can be scheduled flexibly throughout the day as courses do not have to be taken in "real" time.

These courses are designed for students who can work independently with minimum supervision, have good time management skills, and a desire to learn. A successful online student can stay on task and maintain a regular schedule of logging on and keeping up with the readings and course assignments. Additional time may be required beyond the time spent in the classroom. AP courses are college-level and require the ability to work at this level..

GOVERNOR'S EARLY COLLEGE SCHOLARS PROGRAM

APPLICATION AND AGREEMENT LINK

This program encourages juniors and seniors who are interested in accelerating their coursework to earn college credit while still in high school. To qualify, a student must:

- 1] Have a "B" average or better and
- 2] Be on track for an Advanced Studies Diploma and
- 3] Have potential to earn at least fifteen transferable college credits through Advanced Placement courses and/or Dual Enrollment Courses
- 4] Complete a signed contract

BLUE RIDGE VIRTUAL GOVERNOR'S SCHOOL

The Blue Ridge Virtual Governor's School (BRVGS) is an academic year governor's school that provides a challenging and differentiated program of studies in core academic subjects, emphasizing mathematics, science, and technology. The program utilizes interactive technology, field trips, student collaboration and team teaching to create a regional community of learners from the counties of Fluvanna, Goochland, Greene, Louisa, Madison, Nelson, and Orange. The aim of the program is to provide students with instruction in those skills necessary for success beyond high school, and to give individual students both responsibility and freedom in their learning endeavors.

The admissions process for BRVGS is handled at William Wetsel Middle School and the MCPS district office. Students and parents of rising 8th graders are notified of the application process in the fall, and information meetings are held at WWMS. Each year, applications will go out in October and are due back in mid-December. Applicants take standardized tests of ability and achievement, write a timed essay and participate in an interview process.

As part of the application process, students must provide the following:

- Recommendations from current or past teachers of Math and Science
- A recommendation from one other adult who is not related to the student

In addition, applicants to BRVGS take standardized tests of ability and achievement, write a timed essay, and participate in an interview process. Each applicant is scored on the basis of all of these components. Each BRVGS school is limited to 18 acceptances per year for incoming freshmen. Ninth graders may apply to be accepted into the program in 10th grade providing their school has an open slot.

Course offerings for BRVGS students can be found at: <https://sites.google.com/brvgs.k12.va.us/brvgs-program-of-studies/home>. This site lists all of the BRVGS Board-approved courses by grade levels and subject areas, the BRVGS Skills curriculum, and BRVGS Graduation Requirements. BRVGS students may request a paper copy from the MCHS School Counseling Office.



MCHS uses a web-based post-secondary planning tool for students. The Naviance Succeed program guides students through career and college preparation. Students will identify career choices based on four career assessments and see exactly which skills, abilities, and knowledge areas are required to succeed in their chosen field. Students will explore careers and career clusters based on the Holland code to identify careers that match their strengths and areas of interest. High school students will continue developing their Academic Career Plans which were started in middle school.

College Planning & Application Process

College searches, applications, recommendations, scholarships and enrichment programs are managed from one location. Naviance provides our students and families with access to comprehensive information about thousands of colleges as well as a College Match service. A student's Academic Career Plan (ACP), which is reviewed/updated annually, can be found in Naviance. The school counseling office manages, prepares, and sends recommendations and transcripts electronically which allows for documents to arrive in a timely manner. Seniors are responsible for using Naviance to request transcripts for college applications.

The login page for Naviance can be found at: <http://connection.naviance.com/madisonch>
Please see the counseling secretary for assistance logging in.

The Path to Industry Certification: High School Industry Credentialing

How Credentials Work for Student-Selected Verified Credit

The board annually reviews and approves industry, professional or trade association certification examinations and occupational competency assessments that will meet the student-selected verified credit requirements as well as to earn the board's Career and Technical Education seal and Advanced Mathematics and Technology seal. Students who earn a credential by passing a certification or licensure examination may earn up to two student-selected verified credits to meet graduation requirements.

Criteria for Awarding Student-Selected Verified Credit: Student-selected verified credit will be awarded for certification or licensure examinations that meet all of the following criteria:

- Industry certification or licensure examinations that are approved to satisfy the requirements for the Board of Education's Career and Technical Education Seal or the Board of Education's Seal of Advanced Mathematics and Technology will satisfy requirements for student-selected verified credits.
- The teacher and/or the career and technical education program must be certified by the issuing organization relative to the industry certification or license.
- A standard credit may not be verified more than once.

Earning Student-Selected Verified Credit: One student-selected verified credit may be awarded for passing each certification or licensure examination that meets all of the above criteria and the student earns one standard unit of credit only in the career and technical education concentration or specialization.

Two student-selected verified credits may be awarded for passing each certification or licensure examination that meets all of the above criteria; and

- The student meets the career and technical education concentration or specialization course requirements for program completion.
- The student earns at least two standard units of credit in the career and technical education concentration or specialization.
- The student may substitute one of these verified credits for a verified credit in either science or history/social science. In

addition to providing student-selected verified credit(s) and adding value to a student's résumé for obtaining entry-level positions in today's technical job market, credentials provide the following benefits to students:

- added value to a transcript for higher education purposes or obtaining an entry-level position in the technical job market; ● evidence that the student has completed advanced educational preparation by verifying competency in career and technical education skill areas in demand by business and industry;
- increased job opportunities for advancement in a chosen career path; and
- enhanced self-esteem for students through achieving national occupational competency standards recognized by business and industry

CAREER & TECHNICAL EDUCATION PROGRAM OF STUDIES

This section covers the career areas representing workplace fields that are offered at the high school. These areas offer challenging academic preparation and workplace readiness. Students are able to move among areas as interests and goals change. Entering ninth graders are especially encouraged to think about a career path and high school courses that are relevant in preparing for his or her chosen career pathway

Academic & Career Planning (ACP) begins in the seventh grade and continues throughout high school.

Components of the ACP are:

- Selecting postsecondary career pathway based on the student's academic and career interests,
- Aligning student's study for high school graduation with a post-secondary career pathway, and/or college entrance,
- Annual review ACP with student (9th-11th grades)

<p style="text-align: center;">Agriculture & Natural Resources</p> <p>Agriculture, Food Science & Preparation, Natural Resource Management, Environmental Services</p> 	<p style="text-align: center;">Business & Marketing</p> <p>Management, Business Administration, Finance, Marketing, Sales & Services, Information Technology</p> 	<p style="text-align: center;">Communications, Arts, & Media</p> <p>Visual Arts, Performing Arts, Information Technology, Publishing & Broadcasting</p> 	<p style="text-align: center;">Engineering, Trade, & Technical</p> <p>Architecture & Construction, Science –Technology - Engineering – Math, Manufacturing, Design, Planning, Building</p> 	<p style="text-align: center;">Health & Human Services</p> <p>Education & Training, Health Science, Human Services, Hospitality & Tourism</p> 
<p>Agronomist Animal Breeder Animal Caretaker Animal Scientist Botanist Butcher/Meat Cutter Conservation Scientist County Ag Agent Crop Farmer Dairy Farmer Environmental Engineer Extension Service Farm Manager Forester Horticulturist Landscape Livestock Farmer Marine Biologist Nursery Worker Pest Controller Poultry Farmer Rancher Sanitation Inspector Soil Conservationist Tree Surgeon</p>	<p>Accountant Bank Teller Bookkeeper Buyer Computer Programmer Data Processing Economist Manager Financial Manager Insurance Claims Examiner Legal Assistant Loan Officer Medical Records Network Technician Office Manager Paralegal Purchasing Agent Real Estate Agent Sales Associate Shipping & Receiving Clerk Trade Analyst Travel & Tourism Web Master</p>	<p>Actor/Actress Advertising Executive Architect Artist Commercial Artist Costume Designer Curator Decorator Designer Editor Fashion Designer Film Developer Graphic Artist Illustrator Musician Newscaster Producer Public Relations Specialist Publisher Reporter Radio/TV Announcer Researcher Teacher Technical Writer Writer</p>	<p>Air Traffic Controller Aerospace Engineer Automotive Repair Biomedical Engineer Builder Carpenter Chemical Engineer Computer Repairer Computer Engineer Diagnostic Technician Drafter Electrical Engineer Farm Equipment Geologist HVAC Mechanics Locksmith Manager Machinist Mathematician Mechanic Mechanical Engineer Millwright Safety Inspector Small Engine Mechanic Surveyor</p>	<p>Barber Biomedical Technician Chef Child-care Provider Correctional Officer Cosmetologist Dietician Emergency Medical Flight Attendant Food Service Hygienist Technician Health Service Worker Home Health Aide Medical Assistant Medical Records Tech Nurse Physician Physical Therapist Psychologist Radiologic Technician Social Worker Speech Therapist Teacher Veterinarian</p>

Agriculture & Natural Resources	Business & Marketing	Communications, Arts, & Media	Engineering, Trade, & Technical	Health & Human Services
<ul style="list-style-type: none"> <input type="checkbox"/> Ag Plants <input type="checkbox"/> Ag Livestock <input type="checkbox"/> Small Engine Repair <input type="checkbox"/> Agriculture-Prod <input type="checkbox"/> Horticulture <input type="checkbox"/> WBL 	<ul style="list-style-type: none"> <input type="checkbox"/> IT Fundamentals <input type="checkbox"/> Principles of Bus & Marketing <input type="checkbox"/> Marketing <input type="checkbox"/> Sports & Entertainment Marketing <input type="checkbox"/> Econ & Personal Finance <input type="checkbox"/> Computer Info Systems <input type="checkbox"/> Advanced CIS <input type="checkbox"/> Adv. Desktop Multimedia <input type="checkbox"/> Business Law <input type="checkbox"/> DE Business 100 <input type="checkbox"/> DE Business 111 <input type="checkbox"/> WBL 	<ul style="list-style-type: none"> <input type="checkbox"/> Creative Writing <input type="checkbox"/> Spanish I – VI <input type="checkbox"/> French I – VI <input type="checkbox"/> Adv. Desktop <input type="checkbox"/> Band <input type="checkbox"/> Choir <input type="checkbox"/> Art I – IV <input type="checkbox"/> Computer Info Systems <input type="checkbox"/> Adv. Computer Info <input type="checkbox"/> WBL 	<ul style="list-style-type: none"> <input type="checkbox"/> Building Trades I <input type="checkbox"/> Building Trades IIA <input type="checkbox"/> Building Trades IIB <input type="checkbox"/> Electricity <input type="checkbox"/> Technical Drawing & Design <input type="checkbox"/> Architecture & Civil Eng. <input type="checkbox"/> Engineering Drawing & Design <input type="checkbox"/> Advanced Drawing & Design <input type="checkbox"/> WBL 	<ul style="list-style-type: none"> <input type="checkbox"/> Nutrition & Wellness <input type="checkbox"/> Teachers for Tomorrow <input type="checkbox"/> Service Learning <input type="checkbox"/> Intro to Health & Medical Science <input type="checkbox"/> Nursing I & II <input type="checkbox"/> Patient Care Technician <input type="checkbox"/> Integrated Leadership I & II <input type="checkbox"/> Sports Medicine I & II <input type="checkbox"/> WBL

Suggested additional courses that complement the career cluster

<ul style="list-style-type: none"> <input type="checkbox"/> Algebra II <input type="checkbox"/> Chemistry <input type="checkbox"/> Anatomy & Physiology <input type="checkbox"/> Environmental Geosystems <input type="checkbox"/> Econ & Personal Finance <input type="checkbox"/> Principles of Bus & Marketing <input type="checkbox"/> Business Law <input type="checkbox"/> Nutrition & Wellness <input type="checkbox"/> World Language 	<ul style="list-style-type: none"> <input type="checkbox"/> Algebra II <input type="checkbox"/> Chemistry <input type="checkbox"/> Computer Math <input type="checkbox"/> Physics <input type="checkbox"/> World Language <input type="checkbox"/> Psychology <input type="checkbox"/> Programming <input type="checkbox"/> Statistics 	<ul style="list-style-type: none"> <input type="checkbox"/> Algebra II and higher <input type="checkbox"/> Chemistry <input type="checkbox"/> Biology II <input type="checkbox"/> Environmental Science <input type="checkbox"/> Econ & Personal Finance <input type="checkbox"/> Psychology 	<ul style="list-style-type: none"> <input type="checkbox"/> Algebra II <input type="checkbox"/> Physics <input type="checkbox"/> Chemistry <input type="checkbox"/> Environmental Geosystems <input type="checkbox"/> Econ & Personal Finance <input type="checkbox"/> Principles of Bus & Marketing <input type="checkbox"/> Computer Info Systems <input type="checkbox"/> World Language 	<ul style="list-style-type: none"> <input type="checkbox"/> Algebra II <input type="checkbox"/> Chemistry, <input type="checkbox"/> Biology II <input type="checkbox"/> Econ & Personal Finance <input type="checkbox"/> World Language <input type="checkbox"/> Adv. Physical Ed. <input type="checkbox"/> Principles of Bus & Marketing
--	--	--	---	--

WORK BASED LEARNING WITH CAREER AND TECHNICAL EDUCATION

MCHS offers various career and technical education (CTE) programs. CTE programs include agriculture education, business and marketing, health sciences, engineering, and family and consumer sciences. Students have the opportunity to pursue work based learning (WBL) experiences through cooperative education and student apprenticeships.

Work-based learning (WBL) is a school-coordinated sequence of on-the-job experiences that are related to students' career goals and/ or interests. These job experiences are based on instructional preparation and are performed in partnership with local businesses, industries, or other organizations in the community.

Work-Based Learning Program offered at MCHS

Cooperative education is a career-preparation WBL method that combines CTE classroom instruction with paid employment that is directly related to the student's plan of study. The school and the employer plan, coordinate, and supervise the instruction and employment so that each contributes directly to the student's career objectives and employability. Virginia students qualify for credit toward graduation for cooperative education experiences, and they normally work between 11 and 15 hours per week to achieve a minimum of 396 hours.

Criteria for Student Selection

1. The student must be enrolled in a CTE course during the current school year.
2. The Junior year student applicant must have passed 2 SOL's and the Senior year applicant must have passed 4 SOL's.
3. The student must have the consent of a parent or guardian before participating in a WBL experience.
4. The student should have a satisfactory attendance record; it is recommended that the student not have been absent more than 7 days in the previous semester.
5. The student must have their own transportation to and from the job placement.
6. The student must submit a completed application to the MCHS WBL coordinator which will then be reviewed by the CTE department and school administration for meeting the above criteria and the proof of employment.

HOW TO READ A COURSE DESCRIPTION

Course Number & Title: The course number is the state assigned number. This is followed by the title of the course. A superscript **W** or **HW** designates that the course is weighted.

Grade Level: The grade level indicates the most appropriate grade level for taking the course.

Credits: This shows the number of credits earned for the course. A credit is based on a minimum of 140 clock hours of instruction and successful completion of the requirements of the course.

Recommended Background: While not a required prerequisite the recommended background establishes prior knowledge/performance level to lay solid foundation for success moving forward with the next level of coursework.

Course Prerequisite: Prerequisites have been established to increase the student's probability of success in a course. Some courses require a prerequisite, co-requisite, or pre-approval, which may include but is not limited to:

- successful completion of a previous sequential course
- specified grade point average (GPA)
- teacher recommendation, auditions or other specific requirements.

Instructional Grouping: All students should choose challenging classes that maximize their learning opportunities. Rigorous high school courses prepare students well for further education and successful careers. Considerations for placement include student grades, teacher recommendations, standardized assessments, and post-secondary and career goals.

Academic-These are traditional high school level courses.

Honors (H)- Honors courses are considered pre-AP courses and as such require additional reading and writing at a more rigorous level.

Advanced Placement (AP)-These courses are college preparatory classes. Students have the opportunity to receive college credit based on their AP exam score.

Dual Enrollment (DE)-These courses are college level courses in which students receive high school and college credit.

Core Courses: English, Mathematics, Science and Social Studies

Electives: Core departments offer some electives. The majority of electives are found in non-core departments. All courses are not offered every year. Courses are offered based on sufficient number of student requests to justify offering the course.

Multiple Credit Courses: Students may take specified courses more than once for multiple credits over a period of years. For example: Band may be taken up to eight times for credit. Students are reminded that courses required for graduation take precedent over elective courses taken for multiple credits. The school division is required to ensure that student achievement expectations are raised as a student progresses through subsequent enrollments in the course.

AGRICULTURAL EDUCATION

8007 INTRODUCTION TO PLANT SYSTEMS

Grades: 9-12 **1 Credit**

This course is designed to develop competencies in each of the major areas of the Plant Systems career pathway including applied botany, plant propagation, and plant care and selection. Students are also introduced to various divisions of the plant systems industry. Students learn agricultural mechanics applicable to plant systems. As with all agriculture courses, students will be exposed to the principles of leadership and opportunities within student organizations, along with Supervised Agricultural Experience opportunities. **Associated CTE Credential:** [BASF Plant Science Certification](#)

8008 INTRODUCTION TO ANIMAL SYSTEMS

Grades: 9-12 **1 Credit**

Students develop competencies in each of the major areas of the Animal Systems career pathway including animal nutrition, reproduction, breeding, care, and management. Students learn agricultural mechanics applicable to animal systems. As with all agriculture courses, students will be exposed to principles of leadership and opportunities within student organizations along with Supervised Agricultural Experience opportunities. **Associated CTE Credential:** [Beef Quality Assurance](#)

8010 AG PRODUCTION TECHNOLOGY (Previously titled Ag Tech III)

Grades 10-12 **1 Credit**

PREREQUISITE: 8008 or 8007

This course emphasizes areas of plant science, animal science, soil science, agriculture business management, and agricultural mechanization. Beef cattle farm establishment will be the livestock enterprise highlighted. Supervised occupational experience programs and leadership training are important parts of the course. Emphasis is placed on individualized instruction and supervised occupational experience programs. **Associated CTE Credential:** [Livestock Selection Evaluation Certification](#)

8034 HORTICULTURE SCIENCES AND PRACTICES

Grades: 10-12 **1 Credit**

PREREQUISITE: 8007

Students develop the necessary knowledge, skills, habits, and attitudes for entry-level employment and advancement in areas such as floriculture, landscape design, greenhouse operation, nursery plant production, and turf management. They receive instruction in using soil and other plant-growing media and in identifying, propagating, and growing horticultural plants in the green house and land laboratory. Instruction is provided in safety practices and leadership development. Small Engine Repair and Horticulture yearly offerings are based on the student requests and the total number of sections in the Agriculture program. **Associated CTE Credential:** [BASF Plant Science Certification](#) and/or [Horticulture Landscaping Assessment](#)

8082 SMALL ENGINE REPAIR

Grades: 10-12 **1 Credit**

This course offers an intensive study of the operation, maintenance, and repair of small gasoline and diesel engines. Instructional topics include principles of operation of gasoline and diesel engines, tune-up and maintenance procedures, and disassembly, overhaul, and reassembly. Instruction may also include the operation of two cycle and four-cycle engines commonly found on lawn mowers, garden tractors, snow blowers, rotary tillers, chainsaws, and other equipment. The course emphasizes leadership activities and opportunities to participate in FFA functions. Completion of this course may prepare students for Outdoor Power Equipment Certification exams. If this exam is taken and passed, the student may be granted a student selected verified credit. Small Engine Repair and Horticulture yearly offerings are based on the student requests and the total number of sections in the Agriculture program. **Associated CTE Credential:** [Small Engine Technology Assessment](#)

BUILDING TRADES

8515 BUILDING TRADES I

Grades: 9-11 **1 Credit**

Building Trades I introduces students to four core areas of residential construction: masonry, carpentry, electricity, and plumbing. Students emphasize safety by preparing them to earn the OSHA 10 certification and potentially the Core Craft Skills certification.

Associated CTE Credential: [NCCER Core Craft Certification](#)

8516A BUILDING TRADES II-A

Grades 10-12 **1 Credit**

PREREQUISITE: 8515

Building Trades II-A prepares students with a Core Craft licensure opportunity that will help them begin an apprenticeship training through Germanna College. To achieve a license each student has to pass a 9 module test with a score of 80% or higher. The module topics include: Basic Safety, Intro. to construction Math, Intro. to Hand Tools, Intro. to Power Tools, Intro. to Construction Drawings, Intro. to Basic Rigging, Basic Communication Skills, Basic Employability Skills, and Intro. to Material Handling. Passing the class within Madison County High School standards does NOT guarantee a license. **Associated CTE Credential:** [NCCER Core Craft Certification](#)

8516B BUILDING TRADES II-B

Grades 10-12 **1 Credit**

PREREQUISITE: 8516A

Building Trades II teaches students advanced skills in masonry, carpentry, electricity, and plumbing. The class prepares students to synthesize these valuable skills to build or repair complete residential structures, using a variety of materials and tools. **Associated CTE Credential:** [NCCER Core Craft Certification](#)

861010 ELECTRICITY

Grades: 10-11

Develop fundamental electrical skills to help them prepare for a career in the installation, operation, maintenance, and repair of residential, commercial, and industrial systems. Students will engage in hands-on activities in a lab setting. They will be introduced to residential wiring of houses and apartments; commercial wiring of retailers, schools, businesses, and hospitals; and industrial wiring of factories. **Associated CTE Credential:** [NCCER Core Craft Certification](#)

BUSINESS, INFORMATION TECHNOLOGY & MARKETING

6612 COMPUTER INFORMATION SYSTEMS

Grades: 9-12 **1 Credit**

Students apply problem-solving skills to real-life situations through word processing, spreadsheets, databases, multimedia presentations, and integrated software activities. Students work individually and in groups to explore computer concepts, operating systems, networks, telecommunications, and emerging technologies. Students will prepare for Microsoft Office Specialist (MOS) exam for PowerPoint to receive industry certification. **Associated CTE Credential: MOS PowerPoint**

6670 INFORMATION TECHNOLOGY FUNDAMENTALS **Highly Recommended for all 9th Grade Students**

Grades: 9-12 **1 Credit**

Information Technology Fundamentals introduces the essential technical and professional skills required for students to pursue programs leading to professional careers and information technology certifications. The course introduces skills related to digital technology, digital applications, maintaining, troubleshooting computers and networking fundamentals. Students also explore ethical issues related to computers and Internet technology and examine web page and game design. Students will prepare for IC3- The Internet Core Competency Certification is the worldwide benchmark to gauge a student's understanding of computer systems like hardware, software, firmware, networking, and computer literacy. **Associated CTE Credential: Internet & Computing Core Certification**

6115 PRINCIPLES OF BUSINESS & MARKETING

Grades: 9-12 **1 Credit**

Students discover the roles of business and marketing in the free enterprise system and the global economy. Basic financial concepts of banking, insurance, credit, inheritance, taxations, and investments are investigated to provide a strong background as students prepare to make sound decisions as consumers, wage earners, and citizens. The real-world impact of technology, effective communication, and interpersonal skills is evident throughout the course. **Associated CTE Credential: Workplace Readiness**

6120 ECONOMICS AND PERSONAL FINANCE [EPF]

Grades: 11-12 **1 Credit**

The topics of economics and personal finance teach that resources are limited; thus, people must make choices that may include substitutions or alternatives. Students learn the benefits of compound interest over time and that poor money management can lead to difficulty in obtaining credit. Students practice weighing costs and benefits of options when making choices about such things as careers, insurance, housing, investments, savings, automobiles and health care. Students develop thinking skills that include analyzing real-world situations, economic reasoning, decision making, and problem solving. **Associated CTE Credential: WISE Financial Literacy**

6613 ADVANCED COMPUTER INFORMATION SYSTEMS [Adv CIS]

Grades: 10-12 **1 Credit**

PREREQUISITE: 6612

Students apply problem-solving skills to real-life situations through advanced integrated software applications, including printed, electronic, and Web publications. Students build upon basic knowledge in Microsoft Office programs –Word, Excel, PowerPoint and Access learning advanced techniques and preparing for MOS testing. Oral presentations are essential in this class and professionalism in projects is essential. Students work individually and in groups to explore advanced computer maintenance activities, programming, networking, emerging technology, and employability skills. Students work in MOS Practice Software preparing for MOS Certification. **Associated CTE Credential: MOS Word, MOS Excel**

6631 ADVANCED DESIGN, MULTIMEDIA, AND WEB TECHNOLOGIES

Grades: 10-12 **1 Credit**

PREREQUISITE: 6612

Acquire advanced skills in design, multimedia, and web development by applying project management principles to create professional quality digital media projects. Work-based learning experiences allow students to apply layout and design techniques in real world situations. Students create portfolios that include a résumé, certifications earned, and a variety of print, multimedia, and website projects produced in the course. **Associated CTE Credential: Microsoft Technology Associates**

6131 BUSINESS LAW

Grades: 11-12 **1 Credit**

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

6135DE^W DE INTRODUCTION TO BUSINESS [BUS100]

Grades: 11-12 **1 High School Credit** and **3 College Credits:** BUS100 Semester 1

PREREQUISITE: DE eligibility via GCC Multiple Measures Criteria or qualifying Virginia Placement Test scores

This course presents a broad introduction to the functioning of business enterprise within the U.S. economic framework, introducing economic systems, essential elements of business organization, production, human resource management, marketing, finance, and risk management while developing a business vocabulary. This course carries one (1) high school credit and three (3) semester hours of college credit. Payment will be required. (Business 100: Introduction to Business is offered in cooperation with Germanna Community College.) Please note, GCC grades below a C will not transfer to 4 year institutions.

9094DE^W DE PRINCIPLES OF SUPERVISION [BUS111] & ADVANCED ENTREPRENEURSHIP

Grades: 11-12 **1 High School Credit** and **3 College Credits:** BUS111 Semester 2

PREREQUISITE: DE Intro to Business

Teaches the fundamentals of supervision, including the primary responsibilities of the supervisor. Introduces factors relating to the work of supervisor and subordinates. Covers aspects of leadership, job management, work improvement, training and orientation, performance evaluation, effective employee/supervisor relationships, and advanced strategies for entrepreneurship. Students will establish, market, and maintain a business. This course carries one (1) high school credit and three (3) semester hours of college credit. Payment will be required. (Business 100: Introduction to Business is offered in cooperation with Germanna Community College.) Please note, GCC grades below a C will not transfer to 4 year institutions.

8120 MARKETING

Grades: 10-12 **1 Credit**

Students examine activities in marketing and business important for success in marketing employment and postsecondary education. Students will learn how products are developed, branded, and sold to businesses and consumers. Students will analyze industry trends and gain hands-on experience in the marketing of goods, services, and ideas. Topics will include professionalism in the workplace, product planning and positioning, promotion, pricing, selling, economic issues, and the impact of technology on the marketplace. Marketing students will participate in the Simulated Workplace Program as student-employees of nextGEN Business Consulting, providing marketing and promotional plans to local companies and organizations. **Associated CTE Credential: NRF Retail Industry Fundamentals**

8130 ADVANCED MARKETING

Grades: 11-12 **1 Credit**

PREREQUISITE: 8120

Students build on knowledge gained in a prior Marketing course. Students participate in supervisory and management activities focusing on the marketing mix, purchasing, financing, human resources, global marketing, pricing, and emerging technologies. Students will prepare for advancement in marketing careers and postsecondary education. Advanced Marketing students will participate in the Simulated Workplace Program as student-managers of nextGEN Business Consulting, providing marketing and promotional plans to local companies and organizations. **Associated CTE Credential: NRF Customer Service and Sales**

815710 SPORTS & ENTERTAINMENT MARKETING

Grades: 10-12 **1 Credit**

Students develop a thorough understanding of fundamental marketing concepts and theories as they relate to the sports and entertainment industries. Students will investigate the components of customer service, branding, product development, pricing and distribution, business structures, sales processes, digital media, sponsorships and endorsements, as well as promotion needed for sports and entertainment events. The course explores career options and develops workplace readiness skills. **Associated CTE Credential: Workplace Readiness**

ENGINEERING COURSES

8435 TECHNICAL DRAWING & DESIGN

Grades: 9-12 **1 Credit**

In this foundation course, students learn the basic language of technical design while they design, sketch, and make technical drawings, illustrations, models, or prototypes of real design problems. Students develop spatial ability as they apply mathematical concepts to visual representations. **Associated CTE Credential: Workplace Readiness**

8436 ENGINEERING DRAWING AND DESIGN

Grades: 10-12 **1 Credit**

PREREQUISITE: 8435

Students explore the engineering design process and use a graphic language for product design, technical illustration, assembly, patent, and structural drawings. They increase their understanding of drawing and the design process and techniques learned in the prerequisite course. Students use computers, calculators, and descriptive geometry and adhere to established standards to solve design problems. **Associated CTE Credential: Solid Works Associate**

8437 ARCHITECTURAL DRAWING & DESIGN (Previously titled Architectural Drawing and Civil Engineering)

Grades: 10-12 **1 Credit**

PREREQUISITE: 8436, Geometry, and Instructor Recommendation

This course provides an overview of the fields of Civil Engineering and Architecture while emphasizing the interrelationship and dependence of both fields on each other. Students use state-of-the-art software to solve real world problems and communicate solutions to hands-on projects and activities. This course covers topics such as: the roles of Civil Engineers, Architects, Project Planning, Site Planning, Building Design, and Project Documentation and Presentation. There is an opportunity to earn industry certification in an AutoDesk software suite at the end of the course. **Associated CTE Credential: AutoCad**

8438 ADVANCED DRAWING AND DESIGN (3D MODELING)

Grades: 10-12 **1 Credit**

PREREQUISITE: 8436, Geometry, and Instructor Recommendation

Students use a graphic language for product design and technical illustration. They increase their understanding of drawing techniques learned in the prerequisite courses. They research design-related fields while identifying the roles of advanced drawing and design in manufacturing and construction industry processes. They apply the design process, analyze design solutions, reverse engineer products, create 3D models using CADD, construct physical models, and create multimedia presentations of finished designs. A work portfolio based on a chosen graphic project is required. There is an opportunity to earn industry certification in an AutoDesk software suite at the end of the course. **Associated CTE Credential: AutoCad**

FAMILY AND CONSUMER SCIENCE

8282 INTEGRATED LEADERSHIP

Grades: 10-12 **1 Credit**

This course dives into career, community, and family Connections focuses on balancing the multiple demands of career, family, and personal life. The course teaches problem solving, conflict management, goal setting, stress management, and resource management in work and family. Interpersonal skills, needed to build strong relationships in the family and workplace, are also incorporated. Students taking this course should be a member of an extracurricular or co-curricular club or organization and/or hold a job to maximize the impact of the course competencies.

Student leaders are encouraged to consider this class in order to maximize their potential for becoming positive change agents in their current positions, and to prepare them for future leadership opportunities. **Associated CTE Credential: Workplace Readiness**

8283 INTEGRATED LEADERSHIP II

Grades: 10-12 **1 Credit**

PREREQUISITE: 8282 & Leadership Position in a School-Based Club or Organization

This course expands knowledge gained in Integrated Leadership I and dives into career, community, and family connections that focus on balancing the multiple demands of career, family, and personal life. The course teaches problem solving, conflict management, goal setting, stress management, and resource management in work and family. Interpersonal skills, needed to build strong relationships in the family and workplace, are also incorporated. Students select their own personal area of leadership to focus on and will complete a cumulative leadership project that showcases their skills and mastery of course competencies. Students taking this course should be a member of an extracurricular or co-curricular club or organization and/or hold a job to maximize the impact of the course competencies.

Student leaders are encouraged to consider this class in order to maximize their potential for becoming positive change agents in their current positions, and to prepare them for future leadership opportunities. **Associated CTE Credential: Professional Communication**

8229 NUTRITION AND WELLNESS

Grades: 10-12 **1 Credit**

Students enrolled in Nutrition and Wellness focus on making choices that promote wellness and good health; analyzing relationships between psychological and social needs and food choices; choosing foods that promote wellness; obtaining and storing food for self and family; preparing and serving nutritious meals and snacks; selecting and using equipment for food preparation; and identifying strategies to promote optimal nutrition and wellness of society. Critical thinking and practical problem solving opportunities within the area of nutrition and wellness are emphasized. Teacher highlights the basic skills of math, science, and communication when appropriate in the content. Students will have an opportunity to participate in a simulated workplace by operating a restaurant and becoming a part of a serving staff. **Associated CTE Credential: ServSafe**

MOUNTAINEER TEACHER CADET ACADEMY

9062DE^W DE TEACHERS FOR TOMORROW I

Grades: 11-12 **1 High School Credit** and **3 College Credits:** EDU200

PREREQUISITE: DE eligibility via GCC Multiple Measures Criteria or qualifying Virginia Placement Test scores

The Teachers for Tomorrow course introduces juniors and seniors to a career in teaching and public education. The primary elements of the curriculum components are the learner, the school, and the teacher and teaching. The components are intentionally broad in scope and provide a great deal of flexibility based on the career interest of the students. In addition to the fundamental curriculum components, all students are required to observe and participate in an internship. The internship may be done from preschool through 12th grade. Tuition is required. Students who complete Teachers for Tomorrow are eligible to test for ParaPro certification. This is a weighted class. Please note, GCC grades below a C will not transfer to 4 year institutions.

Associated CTE Credential: Para Pro Certification

9072DE^W DE TEACHERS FOR TOMORROW II

Grades: 12 **1 High School Credit** and **3 College Credits:** EDU207

PREREQUISITE: 9072DE

Provides an overview of the physical, intellectual, cognitive, language, social, and emotional development of human beings from birth to adolescence. Emphasizes how hereditary and environmental influences impact the development of the whole child. Tuition is required. Please note, GCC grades below a C will not transfer to 4 year institutions. **Associated CTE Credential: Para Pro**

Certification

9070S SERVICE LEARNING

Grades: 11-12 **1 Credit**

PREREQUISITE: Teacher approval, current year attendance will be evaluated

Service Learning will encourage students to practice community volunteerism during the school day. The objective is to instill a spirit of community involvement that will extend beyond high school into adult life. The Service Learning course is a program open to juniors and seniors interested in serving as tutors and student assistants within the school division or at selected community agencies. Consideration will also be given to students interested in a job that is similar to one within Madison County Public Schools where they have permission to assist an employee daily to gain a better understanding of the job demand and employment responsibilities. Students will be placed within a classroom or assigned to a Madison County Public School employee, and will engage in activities that relate to their placement to include the operation of a classroom. Students will prepare for certification in CPR/First Aid/AED.

HEALTH SCIENCES

8302 INTRODUCTION TO HEALTH AND MEDICAL SCIENCES I

Grades: 10-12 **1 Credit**

This course introduces the student to a variety of health care 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 health care 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, CPR, First Aid, vital signs, and communication skills essential for providing quality patient care. Unique and fun learning experiences will include simulated medical scenarios. Students will prepare for certification in CPR/First Aid/AED.

8360 NURSING ASSISTANT I [To be taken concurrently with Nursing Assistant II]

Grades: 11-12 **1 Credit**

Recommended Background: Introduction to Health and Medical Sciences

Nurse Aide I, offered as an occupational preparation course beginning at the 11th-grade level, emphasizes the study of nursing occupations as related to the health care system. Students study normal growth and development, simple body structure and function, and medical terminology and are introduced to microbes and disease. Students receive elementary skill training in patient-nursing assistant relationships; taking and recording of vital signs; cardiopulmonary resuscitation; and bathing, feeding, dressing, and transporting of patients in hospitals and nursing homes. Limited on-the-job instruction in nursing homes and hospitals is part of the course. This course can be used as an introduction to practical nursing or to prepare the student for Nurse Aide II so that all competences for a certified nursing assistant are met.

8362 NURSING ASSISTANT II [To be taken concurrently with Nursing Assistant I]

Grades: 11-12 **1 Credit**

Nurse Aide II is an occupational preparation course, emphasizing advanced skill training in areas such as catheter care, range of motion, bowel and bladder training, care of the dying, selected procedures for maternal and infant care, and admission and discharge procedures. Students learn diseases and body systems as related to advanced clinical care of the acute medical-surgical patient, the chronically ill, and the elderly. On-the-job instruction in a licensed nursing home is part of the course. Upon successful completion of the nurse aide program, the student is eligible to take the nurse aide certification exam that leads to employment as a certified nurse aide in hospitals and nursing homes. **Associated CTE Credential: CNA**

*Students who plan to take Nursing I and II for CNA Certification must not be guilty of a barrier crime. More details on barrier crimes can be found at: http://www.vdh.state.va.us/OLC/Laws/documents/barrier_crimes_guide.pdf

830310 PATIENT CARE TECHNICIAN

EKG & Phlebotomy

Grades: 12 **1 Credit**

PREREQUISITE: 8362

Patient Care Technician, offered as an occupational course after the completion of Nursing Assistant at the 12th grade level, emphasizes the study of nursing occupations as related to the healthcare system. Students study normal growth and development, simple body structure and function, and medical terminology and are introduced to microbes and disease. Upon completion of the course, students will master skills performing ECGs, basic medical, lab and exam procedures, drawing blood, and providing basic patient care. Students will be eligible to take the National Certification exams to become a Certified Phlebotomy Technician, Certified EKG Technician, and Certified Patient Care Technician. **Associated CTE Credential: EKG Technician**

837010 SPORTS MEDICINE I**Grade Level:** 11-12 **1 Credit****Recommended Background:** Introduction to Health and Medical Sciences

Students are introduced to topics such as human anatomy and physiology, nutrition, biomechanics, medical terminology, injuries and illnesses, and legal and ethical issues in sports medicine. Students also examine prospective careers in the sports medicine field. Upon successful completion of this course, students may be eligible to pursue certification as a personal trainer. Students will prepare for certification in CPR/First Aid/AED.

ENGLISH

1130A ENGLISH 9 ACADEMIC

Grade: 9 1 Credit

English 9 covers the Virginia Standards of Learning at the 9th grade level. The curriculum features a study of select novels, short stories, dramatic prose, and nonfiction selections. Students compose a variety of forms with an emphasis on analysis and persuasion utilizing evidence from credible sources. Students will apply research techniques to analyze information gathered from diverse sources by identifying misconceptions, and possible bias citing both quoted and paraphrased information using MLA style with the creation of a research project. This course also includes the continued development of grammar skills, vocabulary enrichment and reading strategies.

1130H^{HW} ENGLISH 9 HONORS

Grade: 9 1 Credit

English 9 Honors covers the same Virginia Standards of Learning as the 9th-grade level English 9 Academic course. While the curriculum also features select novels, short stories, dramatic prose, and nonfiction selections, the literature choices are most often more complex and of a higher Lexile level than Academic English 9. Students in this course will apply research techniques to analyze information gathered from diverse sources by identifying misconceptions, and possible bias citing both quoted and paraphrased information using MLA style with the composition of a research paper. This course also includes the continued development of grammar skills, vocabulary enrichment, and analytical reading strategies. Honors courses exceed standard course requirements and are meant to prepare students for future honors courses, Advanced Placement, and Dual Enrollment courses. This course carries a .5 weighted credit.

1140A ENGLISH 10 ACADEMIC

Grade: 10 1 Credit

PREREQUISITE: English 9

English 10 Academic covers the Virginia Standards of Learning at the 10th grade level. The curriculum includes the coverage of grammar as needed in relation to composition. Composition assignments will relate to various types of literature and will reflect the four types of writing. Students will study world literature thematically. In addition to selected short stories and poems, students will study drama and multiple novels or fiction. This course includes a major research project/paper.

1140H^{HW} ENGLISH 10-HONORS

Grade: 10 1 Credit

PREREQUISITE: English 9

English 10-Honors covers the Virginia Standards of Learning at the 10th grade level. The weighted course is a survey of multicultural world literature. The course will focus on poetry, the short story, drama and the novel. Course readings will include novels covered at a fast pace. Composition, an important component of this course, will focus on themes and interpretations of the literature studied. Writing will vary in purpose and audience. This class includes a major literary research paper.

1150A ENGLISH 11 ACADEMIC

Grade: 11 1 Credit

PREREQUISITE: English 10

English 11 Academic covers the Virginia Standards of Learning at the 11th grade level. Students will concentrate on grammar skills as needed to improve composition, focusing on various styles of essay writing, including, but not limited to, the narrative essay, the persuasive essay and technical writing. The study of American literature will be chronological and thematic with an emphasis on non-fiction. Students will focus on skills needed to pass both the End-of-Course Standards of Learning Test in Writing and Reading with an emphasis on strategies for vocabulary development, persuasive writing and reading comprehension.

1150DE^W/1160DE^W ENGLISH 11 DE/ENGLISH 12 DE 111/112

Grade: 11-12 **1 High School Credit** and **6 College Credits:** ENG 111 & ENG 112

PREREQUISITE: DE eligibility via GCC Multiple Measures Criteria or qualifying Virginia Placement Test scores

ENG 111 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 argumentation with at least one researched essay. ENG 112 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. Requires students to locate, evaluate, integrate, and document sources and effectively edit for style and usage. Successful completion of ENG 111 is required to move on to ENG 112. Please note that GCC grades below a C will not transfer to 4 year institutions.

1160A ENGLISH 12 ACADEMIC

Grade: 12 **1 Credit**

PREREQUISITE: English 11

English 12 Academic covers the Virginia Standards of Learning at the 12th grade level. This course is a chronological study of British literature. Course readings will include poetry, drama, short stories and novels. Emphasis will be on improving language through usage in speaking and writing. Grammar will be reviewed as needed. Composition will be related primarily to the literature studied. Students will be required to complete a major research paper or project.

1162DE^W ENGLISH 12 DE 245/246

Grade: 12 **1 High School Credit** and **6 College Credits:** ENG 245 & ENG 246

PREREQUISITE: English 11 DE 111/112

ENG 245 Examines major writers of American literary history. Involves critical reading and writing. ENG 246 covers major English works from the Anglo-Saxons to the present, emphasizing ideas and characteristics of the British literary tradition. Involves critical reading and writing. Successful completion of ENG 245 is required to move on to ENG 246. Please note that GCC grades below a C will not transfer to 4 year institutions.

1171 CREATIVE WRITING

Grades: 9-12 **1 Credit**

Creative Writing is an elective course for tenth through twelfth grade students who enjoy writing and want to develop their skills. Students will write in many genres, using a variety of techniques and for a range of purposes and audiences. Students will produce polished writing in fiction, non-fiction, and poetry. Students will study contemporary authors and the composing processes of professional writers. Students will create a portfolio of their writing and submit multiple works for publication. Students will contribute to the content and production of *Scream*, the MCHS literary magazine, and the MAHI (the School Yearbook)

118010 YEARBOOK PRODUCTION I

Grades: 10-12 **1 Credit**

Recommended Background: C of higher in previous English course

This course offers students an introduction to the basic elements of visual communication and the print world. This class will focus on basic skills to create our printed yearbook. This includes the basics of photography, camera usage, and compositional skills. We will also focus on layout and page design. Writing assignments will include interviewing techniques, caption writing, and printed story methods, including polls, surveys, feature stories, and headline construction. In addition, we will focus on ethics in journalism, including libel, copyright, and proper use of trademarked materials.

118110 YEARBOOK PRODUCTION II**Grades:** 11-12 **1 Credit****PREREQUISITE:** Yearbook Production I

This course offers continuation on school development and encourages more enhanced skills that can lead and guide the yearbook development process. This includes the use of photography, camera usage, and compositional skills to tell the story of our school year at Madison County High School. Writing assignments will include interviewing techniques, caption writing, and printed story methods, including polls, surveys, feature stories, and headline construction. In addition, we will focus on ethics in journalism, including libel, copyright, and proper use of trademarked materials.

118210^{HW} YEARBOOK LEADERSHIP**Grades:** 12 **1 Credit****PREREQUISITE:** Teacher Recommendation

Students in Yearbook Leadership will be assigned editorial roles for the current version of the yearbook and serve as a student leader among peers in developing the process, systems and year long operational deadlines for the final delivery of the yearbook. These students will partner with the teacher of this course to create a simulated workplace environment of a journalistic production business. These students will be required to show mastery for the techniques and skills covered in Yearbook Production I and Yearbook Production II.

5710 ESL I**Grades:** 9-12 **1 Credit**

This course is designed to provide instruction to speakers of other languages who are classified as less than independent in English. The main goal of the program is the acquisition of English communication skills.

5720 ESL II**Grades:** 9-12 **1 Credit**

This course is designed to provide instruction to speakers of other languages who are classified as less than independent in English. The main goal of the program is the acquisition of intermediate English communication skills.

HEALTH AND PHYSICAL EDUCATION

7300 HEALTH AND PHYSICAL EDUCATION I

Grade: 9 **1 Credit**

This course will help students develop an understanding of health concepts, behaviors, and promote ways to enhance one's health. Topics within the curriculum include: disease prevention, consumer health, environmental health, First Aid, personal and family survival, drugs, alcohol, tobacco, and Family Life. The physical education program offers students opportunities to participate in badminton, ping pong, volleyball, basketball, football, soccer, softball, as well as a course-long emphasis on cardiovascular and muscular fitness. The Virginia Wellness tests are administered during this course.

7405 HEALTH, PHYSICAL EDUCATION & DRIVER EDUCATION II

Grades: 10-12 **1 Credit**

Recommended Background: Health and Physical Education I

This course will provide students with 36 + hours of classroom training in Driver's Education as required for students to obtain their Driver's License. The Physical Education offerings include activities that promote lifelong fitness activities such as pickleball, badminton, recreational games, and ultimate. The course also has a strong emphasis on personal fitness and uses state based fitness assessments as a way of having each student set personal fitness goals. Students in grade ten demonstrate comprehensive health and wellness knowledge and skills. The student will advocate for personal health and well-being and promote health-enhancing behaviors for others. *Students must be 15 years and 6 months old to be eligible for a learner's permit. Students must have a learner's permit for 9 months and be 16.5 years old to be eligible for a driver's license. When the student successfully completes the classroom phase and has secured a learner's permit, then he or she may take behind-the-wheel driver instruction. Students must sign up with the teacher for driving time. There is a fee for behind-the-wheel driver instruction.

7638 ADVANCED PHYSICAL EDUCATION: LIFETIME ACTIVITIES

Grades: 10-12 **1 Credit**

PREREQUISITE: Health & Physical Education I

Recommended Background: Health & Physical Education II

This course is designed for students to develop specific skills for activities that lead to a lifetime of fitness. Activities will include, but are not limited to, fly fishing, table tennis, hiking, bowling, personal fitness. Emphasis will be placed on the development of skills and knowledge development to play at the recreational level.

7640 ADVANCED PHYSICAL EDUCATION: PERSONAL FITNESS (Previously titled Strength and Conditioning)

Grades: 10-12 **1 Credit**

PREREQUISITE: Health and Physical Education I

Recommended Background: Health & Physical Education II

Personal Fitness is an elective physical education course that focuses on fitness, strength training, physical conditioning, and lifetime health concepts, activities and knowledge to promote health and wellness. This course is structured to develop individualized knowledge of weight training and physical conditioning for the beginning student and the advanced student. The course requires mastery of training principles and thorough understanding of fitness center safety rules prior to participation in weight room laboratory experiences. The course content is presented so that teachers may select strategies and instructional techniques designed to improve muscular strength and endurance, flexibility, and cardiorespiratory endurance. Students will gain the necessary information and skills to plan and implement a personal fitness and conditioning program that includes skill- and health-related fitness components to achieve and maintain a health-enhancing level of physical fitness for a lifetime. Various training models will be presented that allow flexibility of instruction among diverse student needs. Students will continue to implement and modify personal fitness and conditioning programs.

MATHEMATICS

3130 ALGEBRA I

Grades: 7-12 **1 Credit**

This is the fundamental course for any study of advanced mathematics. The topics include the real number system, sets, polynomials, equations, functions, problem-solving, graphing, exponents and radicals. This course will involve extensive use of the graphing calculator.

3131-32 ALGEBRA I (Year-long)

3131 – Algebra I Part I

3132 – Algebra I Part II

Grades: 7-12 **1 Math Credit and 1 Elective credit**

This is the fundamental course for any study of advanced mathematics. The topics include the real number system, sets, polynomials, equations, functions, problem-solving, graphing, exponents and radicals. This course will involve extensive use of the graphing calculator.

3143 GEOMETRY

Grades: 7-12 **1 Credit**

PREREQUISITE: Algebra I

Recommended background: Pass Algebra I SOL, Teacher Recommendation

Topics include congruency, parallelism, perpendicularity, similarity as applied to polygons, and 2-D and 3-D figures. Students will also study right triangle trigonometry, transformations, circles, and constructions. Writing proofs will be an integral part of the course. The semester course will be faster paced than the year-long course.

3144-45 GEOMETRY (Year-long)

3144 – Geometry Part I

3145 - Geometry Part II

Grades: 9-12 **1 MATH Credit and 1 ELECTIVE Credit**

PREREQUISITE: Algebra I

Topics will include congruency, parallelism, perpendicularity, similarity as applied to polygons, and 2-D and 3-D figures. Students will also study right triangles, trigonometry, transformations, circles, constructions, deductive reasoning and conditional statements. A study of proofs will be included.

3134A ALGEBRA FUNCTIONS AND DATA ANALYSIS [AFDA]

Grades: 10-12 **1 Credit**

PREREQUISITE: Algebra I

Algebra, Functions and Data Analysis is a course for students who find math challenging and who need to sharpen their algebra skills before taking Algebra II. Algebra, Functions and Data Analysis will focus on real-world problems through the use of mathematical modeling and data analysis. Students will study about functions, probability, experimental design, and data analysis and explore many advanced algebra topics. Data will be generated by practical applications in the areas of science, business, and finance.

3135 ALGEBRA II

Grades: 9-12 **1 Credit**

PREREQUISITE: Geometry

Recommended background: Pass Alg I SOL, Algebra I C or above and/or teacher recommendation

In this course, a thorough treatment of advanced algebraic concepts will be covered through the study of functions, "families of functions," equations, inequalities, systems of equations and inequalities, polynomials, rational and radical equations, complex numbers, and sequences and series, and statistics. Emphasis will be placed on practical applications, modeling, and statistical analysis throughout the course of study. Oral and written communication concerning the language of algebra, logic of procedures, and interpretation of results will also permeate the course. This course will take a theoretical approach.

3137 PROBABILITY AND STATISTICS

Grades: 9-12 **1 Credit**

Prerequisite: Algebra II or AFDA

In this course, students will build upon the probability and statistics skills developed in Algebra II or AFDA. Topics will include data collection and analysis, the normal distribution, probabilities of events, correlation and regression. Data Sets will be selected bases upon student interest, relevance to careers, and practical application. Students will upload data for analysis, create graphical displays, and export results using an online statistics application.

3150^{HW} TRIGONOMETRY

Grades: 10-12 **1 Credit**

PREREQUISITE: Algebra II

Recommended background: Pass Algebra II SOL, Algebra II B- or above, and/or teacher recommendation

This is an advanced functions course that follows Algebra II. This course is a prerequisite for Math Analysis, Pre-Calculus. The course begins with a detailed study of trigonometry and the use and application of trig functions. Other topics include exponential and logarithmic functions, equations and modeling.

3156 COMPUTER MATH

Grade: 10-12 **1 Credit**

PREREQUISITE: Algebra I

This is a semester course designed to provide students with experiences in using computer programming techniques and skills to solve problems that can be set up as mathematical models. CTE completers earning a standard diploma who successfully complete the standards for this course may earn credit toward meeting the mathematics graduation requirement. This course may also be taken as an elective for students interested in programming. Programming concepts, problem-solving strategies, and mathematical applications will be integrated throughout the course. Students will use Alice 3.0 programming language for the course.

3162^{HW} MATHEMATICAL ANALYSIS

Grades: 10-12 **1 Credit**

PREREQUISITE: Trigonometry

Recommended Background: C+ or above in Trigonometry and/or Teacher Recommendation

This course will extend the study of trigonometry. Topics to be explored will include sequences and series, conics, polar graphing, vectors, matrices, parametric equations, complex numbers, and an introduction to limits. Emphasis will be on problem solving. Designed for chemistry, engineering, mathematics, physics and technology.

3162DE^W DE PRE-CALCULUS [MTH 161-162]

Grades: 11-12 **1 High School Credit** and **6 College Credits:** MTH161-162

PREREQUISITE: Trigonometry or Math Analysis and DE eligibility via GCC Multiple Measures Criteria or qualifying Virginia Placement Test scores

Recommended Background: Trigonometry or Math Analysis with a C or better

Presents college algebra, analytic geometry, trigonometry, and algebraic exponential, and logarithmic functions. This weighted course carries one (1) weighted high school credit and six (6) semester hours of college credit. Payment will be required. Please note, a grade of C or better in MTH 161 is required by GCC to move on to MTH 162.

3233DE^W DE COLLEGE STATISTICS [MTH 245]

Grades: 11-12 **1 High School Credit** and **3 College Credits:** MTH245

PREREQUISITE: DE Precalculus with a grade of a C or better (per GCC)

This course presents an overview of statistics, including descriptive statistics, elementary probability, probability distribution, estimation, hypothesis testing, and correlation and regression. Lecture 3 hours per week. Note MTH 245 is recommended for students who will regularly apply statistics within their major/career (biology, business, environmental science, liberal arts, and social sciences). This weighted courses carried one (1) weighted high school credit and 3 semester hours of college credit. Payment will be required. Please note, GCC grades below a C will not transfer to 4 year institutions.

3231DE^W DE CALCULUS WITH ANALYTIC GEOMETRY I [MTH 263]

Grades: 12 **1 High School Credit** and **4 College Credits:** MTH263

PREREQUISITE: DE Precalculus with a grade of a C or better (per GCC)

Presents analytic geometry and the calculus of algebraic and transcendental functions including the study of limits, derivatives, differentials, and introduction to integration along with their applications. Designed for chemistry, engineering, mathematics, physics, and technology. This weighted course carries one (1) weighted high school credit and four (4) semester hours of college credit. Payment will be required. Please note, GCC grades below a C will not transfer to 4 year institutions.

MUSIC

9234S ADV BAND (Marching Band)

[Semester 1]

Grades: 9-12 **1 Credit**

PREREQUISITE for wind and percussion players: Rising 9th grade students must have been enrolled in middle school band and demonstrated proficiency on their instrument by the end of their 8th grade year, OR enrolled in a high school band class during the previous school year.

Recommended Background for color guard: Dance experience is beneficial, but not required.

The Advanced Band course takes place during the Fall Semester. The course primarily focuses on Marching Band for the duration of the semester, but switches gears to prepare for a Winter Concert stage performance after the marching competition season ends. This is a co-curricular course, meaning there is a large portion of the course that takes place outside of the school day. Attendance at all rehearsals and performances are mandatory and graded.

9232S SYMPHONIC BAND

[Semester 2]

Grades: 9-12 **1 Credit**

PREREQUISITE: Rising 9th grade students must have been enrolled in middle school band and demonstrated proficiency on their instrument by the end of their 8th grade year, OR enrolled in a high school band class during the previous school year.

The Symphonic Band course is for wind players only, and is the counterpart to the Advanced Band- Percussion course. This course focuses on concert stage performances for the semester. This is a co-curricular course, meaning there is a portion of the course that takes place outside of the school day. Attendance at all rehearsals and performances are mandatory and graded.

9289S CONCERT CHOIR

Grades: 9-12 **1 Credit**

Recommended background: Previous enrollment in choir at the middle school or high school level.

This course is for students interested in developing vocal techniques for good vocal production. Students will sing music written in two or more parts. Attendance at all performances and rehearsals, both during school and out of school time, is mandatory and graded in the gradebook. Many different musical styles will be studied and performed. Students are urged to stay for two semesters. Students may repeat this class for credit, with teacher approval.

9222 JAZZ IMPROVISATION

Grades: 10-12 **1 Credit**

PREREQUISITE: Teacher recommendation

This course is for students who wish to learn about jazz improvisation on their instrument or a secondary instrument. Students enrolled in this class must supply their own instrument with the exception of the piano. Students enrolled in this class must supply their own instrument with the exception of the piano and drums.

9234SP ADVANCED BAND-PERCUSSION

[Semester 2]

Grades: 9-12 **1 Credit**

Prerequisite: Rising 9th grade students must have been enrolled in middle school band and demonstrated proficiency on their instrument by the end of their 8th grade year, OR enrolled in a high school band class during the previous school year.

The Advanced Band- Percussion course is for percussionists only, and is the counterpart to the Symphonic Band course. This course focuses on concert stage performances for the semester, including both concert band and percussion ensemble. This is a co-curricular course, meaning there is a portion of the course that takes place outside of the school day. Attendance at all rehearsals and performances are mandatory and graded

SCIENCE

4210A EARTH SCIENCE ACADEMIC

Grades: 9-12 **1 Credit**

Earth Science includes astronomy (the universe, galaxies, stars, the solar system, and the moon), geology, (mapping, rocks and minerals, soils, volcanoes, earthquakes, and other earth processes), meteorology (atmospheric studies, climate, weather, and the water cycle), and oceanography (sea floor topography, sea water, ocean currents, and the wetlands). Current environmental issues are investigated. Demonstrations and laboratory exercises are used to enhance the learning of the topics being considered. Opportunities for field trips and study of additional topics are available.

4310A BIOLOGY I ACADEMIC

Grades: 9-12 **1 Credit**

Biology is the study of living things. Topics studied include basic ecology, chemistry, the cell, homeostasis, photosynthesis, DNA and RNA, mitosis and meiosis, sexual and asexual reproduction, heredity, taxonomy, microorganisms, infectious diseases, the human body, the effects of foreign substances on the human body, and evolution. A number of laboratory experiments are performed and will require students to work cooperatively and collaboratively with other students.

◆ **Alternatives to animal dissection techniques within each relevant curriculum will be provided.**

4310H^{HW} BIOLOGY I HONORS

Grades: 9-12 **1 Credit**

Biology is the study of living things. Topics studied include basic ecology, chemistry, the cell, homeostasis, photosynthesis, DNA and RNA, mitosis and meiosis, sexual and asexual reproduction, heredity, taxonomy, microorganisms, infectious diseases, the human body, the effects of foreign substances on the human body, and evolution. The course will go beyond the SOL requirements and challenge students to extend beyond the curriculum. Projects will be heavily incorporated into student work and will require students to do work outside of class. A number of laboratory experiments, case studies, and scientific journal readings are performed and will require students to work cooperatively and collaboratively with other students.

◆ **Alternatives to animal dissection techniques within each relevant curriculum will be provided.**

4330^{HW} ANATOMY & PHYSIOLOGY (Previously titled Biology II: Anatomy & Physiology)

Grades: 11-12 **1 Credit**

PREREQUISITE: Biology Credit

The course will include microbiology, advanced genetics; human anatomy and physiology; human diseases; and a more in-depth view of the public health of our community, state, nation and world, and how each affects a given individual. Guest speakers may be used to give students insight into jobs related to the subject matter considered, and how relevant these topics are to everyday life. The class is heavily based on projects and an independent learning environment, meant to challenge students. A number of laboratory experiments are performed and will require students to work cooperatively and collaboratively with other students. Students have the following options for a final exam: comparative anatomy dissection or a cumulative final. As of the 2021-2022 school year, this is an approved BRVGS Local Partner course (remains half-weighted)

◆ **Alternatives to animal dissection techniques within each relevant curriculum will be provided.**

4410 CHEMISTRY I

Grades: 10-12 **1 Credit**

PREREQUISITE: Biology; Algebra II or enrolled in Algebra II

Chemistry I is a course for students in which the following topics are investigated in some depth: atomic structure, chemical bonding, the mole, formulas and equations, the gas laws, solutions, acids and bases, chemical reactions, and stoichiometry. Algebra-based calculations are integrated into the study of most of these topics. Both open ended laboratory experiments and standard verification-type laboratory experiments are performed by small groups of students.

4422DE^W CHEMISTRY DE 111**Grades:** 11-12 **1 High School Credit** and **4 College Credits****PREREQUISITE:** Chemistry and DE eligibility via GCC Multiple Measures Criteria or qualifying Virginia Placement Test scores

Emphasizes experimental and theoretical aspects of inorganic, organic, and biological chemistry. Discusses general chemistry concepts as they apply within our society and environment. Please note, a grade of C or better in CHM 111 is required by GCC to move on to CHM 112. As of the 2022-2023 school year, this is an approved BRVGS Local Partner course.

4220ES ENVIRONMENTAL GEOSYSTEMS (Previously titled Environmental Science)**Grades:** 11-12 **1 Credit****PREREQUISITE:** Earth Science and Biology

An interdisciplinary lab science, with emphasis on the study of human interactions with the Earth. This course covers current issues in geology, water science, climate science and ecology. Topics include water resources, populations, ecosystems, dynamics of communities, and emerging sciences behind sustainable products and resources.

4510^{HW} PHYSICS**Grade:** 11-12 **1 Credit****PREREQUISITE:** Algebra II

This course teaches fundamental principles of physics, covering mechanics, thermodynamics, wave phenomena, electricity and magnetism, and selected topics in modern physics. This is a weighted course.

423010 Earth Science II: Geology**Grades:** 11-12 **1 Credit****PREREQUISITE:** Earth Science and Biology

This is an in-depth course dealing with the physical and historical aspects of the Earth. Emphasis will be placed on geological processes, earth resources, and features that govern the Earth. Extensive laboratory experiences and occasional field excursions are provided to enhance the students understanding and application of the course material.

4230DE^W EARTH SCIENCE II: GEOLOGY DE 105**Grades:** 11-12 **1 High School Credit** and **4 College Credits****PREREQUISITE:** Chemistry and DE eligibility via GCC Multiple Measures Criteria or qualifying Virginia Placement Test scores

Students will investigate the composition and structure of the earth and modifying agents and processes. Investigates the formation of minerals and rocks, weathering, erosion, earthquakes, and crustal deformation, with an emphasis on the resources and materials used by society.

461010 SCIENTIFIC RESEARCH & DESIGN**Grades:** 10-12 **1 Credit (Elective)**

Scientific Research and Design is a project-based learning course. In this course, students will learn about the nature of science, methods of scientific inquiry, and the application of scientific information in society. Students will complete independent and collaborative research projects wherein they will design and execute experiments, and present their findings using a variety of media.

SOCIAL STUDIES

2215A WORLD GEOGRAPHY/WORLD HISTORY I

Grades: 9 **1 Credit**

This course focuses on the world's people, places, and environments with historical emphasis on ancient times until about 1500 A.D.

2215H^{HW} WORLD GEOGRAPHY/WORLD HISTORY I HONORS

Grades: 9 **1 Credit**

This honors course focuses on the world's people, places, and environments with historical emphasis on ancient times until about 1500 A.D.(C.E.) The fast-paced course places an emphasis on reading primary and secondary sources and writing as well as a greater depth of content and understanding. This is a rigorous history course designed for highly motivated students and will provide the students with the knowledge and skills to be successful in future honors and dual enrollment social studies classes. Students should expect frequent homework. The course carries a .5 weighted credit.

2216^{HW} WORLD GEOGRAPHY/WORLD HISTORY II HONORS

Grades: 10-12 **1 Credit**

Recommended Background: Pass World History I SOL Test

This course covers geography and history from 1500 A.D. to the present with emphasis on Western Europe. The fast-paced course places an emphasis on reading primary and secondary sources and writing as well as a greater depth of content and understanding. This is a rigorous history course designed for highly motivated students and will provide the students with the knowledge and skills to be successful in future honors and dual enrollment social studies classes. Students should expect frequent homework. The course carries a .5 weighted credit.

2360A VIRGINIA/US HISTORY ACADEMIC

Grade: 11 **1 Credit**

This course covers the development of American ideals and institutions through the study of major events, eras, and personalities of Virginia and United States history from the Age of Discovery to the present.

2996D^W DUAL ENROLLMENT: VIRGINIA/US HISTORY [HIS 121/122]

Grades: 11-12 **1 High School Credit and 6 College Credits**

PREREQUISITE: DE eligibility via GCC Multiple Measures Criteria or qualifying Virginia Placement Test scores

This college course surveys United States history from its beginning to the present. This honors course meets the Virginia/United States history graduation requirement. This weighted course carries one (1) weighted high school credit and six (6) semester hours of college credit. Payment will be required. Successful completion of HIS 121 is required to move on to HIS 122. Please note that GCC grades below a C will not transfer to 4 year institutions.

2440A VIRGINIA/US GOVERNMENT ACADEMIC

Grade: 12 **1 Credit**

In this course the principles of American democracy are examined. Some of the major topics studied are the three branches of government, the US Constitution and other significant documents, civil rights and liberties, state and local governments, American public policy and comparative government.

244540^W ADVANCED PLACEMENT U.S. GOVERNMENT AND POLITICS

Grade: 12 **1 Credit**

PREREQUISITE: DE U.S. History

Recommended Background: B or higher in DE U.S. History

The AP U.S. Government and Politics course provides a college-level, nonpartisan introduction to key political concepts, ideas, institutions, policies, interactions, roles, and behaviors that characterize the constitutional system and political culture of the United States. Students will study U.S. foundational documents, Supreme Court decisions, and other texts and visuals to gain an understanding of the relationships and interactions among political institutions, processes, and behaviors. They will also engage in practices that require them to read and interpret data, make comparisons and applications, and develop evidence-based arguments. The goal of this course is to prepare students for the end of the year Advanced Placement Test which could earn the student college credit for the course.

2900 PSYCHOLOGY

Grades 11-12 **1 Credit**

The course is designed for students interested in the psychological perspective. Basic theories, research techniques, and detailed psychological methods are examined. Students will engage in a variety of activities and experiments to gain an understanding of psychology concepts.

WORLD LANGUAGES

5110 FRENCH I

Grades: 9-12 **1 Credit**

This beginner course will focus on high frequency words and phrases used in the language in order to maximize the students' ability to communicate and understand quickly. In this introductory course, the primary objective is French comprehension (reading and listening) while also helping students develop their French production (writing and speaking) naturally. Additionally, students will enhance their communication in French by studying, in French, particular cultural aspects of the French speaking world.

5120 FRENCH II

Grades: 9-12 **1 Credit**

PREREQUISITE: French I

Students in French II will continue to acquire structure of basic language patterns, high frequency structures, and vocabulary. As students develop in their acquisition and mastery of French, there is still a heavy focus on reading and listening in French. However, in this second year of instruction, students will demonstrate their skills more frequently in speaking and writing. Students will continue to study the culture and customs of the French-speaking world.

5130 FRENCH III

Grades: 9-12 **1 Credit**

PREREQUISITE: French II

French III students continue to acquire language like in earlier levels. Reading, listening, writing, and speaking all receive emphasis as students now increase their efforts in expanding their skill set. French III student abilities will continue to evolve and students will produce more language in writing and speaking. The customs and culture of French-speaking countries and people will continue to be a focus of this class.

5140^{HW}/5150^{HW}/5560^{HW} FRENCH IV/V/VI

Grades: 11-12 **1 Credit**

PREREQUISITE: French III/IV/V

Recommended background: B- or higher in French III

French IV students will continue to acquire more complex language through comprehensible listening, reading, conversation, and discussion. At this level, students will engage in more spontaneous conversation and continue to develop and improve their skills in all four modes of communication (reading, listening, speaking, and writing). Students will also continue to learn in the target language about historical events, current issues, culture, and customs of French-speaking countries and people. This is a half-weighted class and is required for membership in the national French honor society, La Société Honoraire de Français.

5510 SPANISH I

Grades: 9-12 **1 Credit**

This beginner course will focus on high frequency words and phrases used in the language in order to maximize the students' ability to communicate and understand quickly. In this introductory course, the primary objective is Spanish comprehension (reading and listening) while also helping students develop their Spanish production (writing and speaking) naturally. Additionally, students will enhance their communication in Spanish by studying, in Spanish, particular cultural aspects of the Spanish speaking world.

5520 SPANISH II

Grades: 9-12 **1 Credit**

PREREQUISITE: Spanish I

Students in Spanish II will continue to acquire structure of basic language patterns, high frequency structures, and vocabulary. As students develop in their acquisition and mastery of Spanish, there is still a heavy focus on reading and listening in Spanish. However, in this second year of instruction, students will demonstrate their skills more frequently in speaking and writing. Students will continue to study the culture and customs of the Spanish-speaking world.

5530 SPANISH III

Grades: 10-12 **1 Credit**

PREREQUISITE: Spanish II

Spanish III students continue to acquire language like in earlier levels. Reading, listening, writing, and speaking all receive emphasis as students now increase their efforts in expanding their skill set. Spanish III student abilities will continue to evolve and students will produce more language in writing and speaking. The customs and culture of Spanish-speaking countries and people will continue to be a focus of this class.

5540^{HW}/5550^{HW}/5560^{HW} SPANISH IV/V/VI

Grades: 11-12 **1 Credit**

PREREQUISITE: Spanish III/IV/V

Recommended background: B- or higher in Spanish III

Spanish IV students will continue to acquire more complex language through comprehensible listening, reading, conversation, and discussion. At this level, students will engage in more spontaneous conversation and continue to develop and improve their skills in all four modes of communication (reading, listening, speaking, and writing). Students will also learn in the target language about historical events, current issues, culture, and customs of Spanish-speaking countries and people. This is a half-weighted class and is required for membership in the national Spanish honor society, La Sociedad Honoraria Hispánica.

VISUAL ARTS

9120 ART I

Grades: 9-12 **1 Credit**

Art 1 is an introductory studio course that invites 9th through 12th grade students to become active participants in the visual arts. This course is designed to assist students in gaining more meaningful knowledge of a broad range of ideas, artistic styles, media, and processes in the production of art. In addition to creating artworks, Art 1 promotes visual literacy and the understanding of enduring ideas and concepts about art.

9130 ART II

Grades: 10-12 **1 Credit**

PREREQUISITE: Art I

Art 2 is designed for students interested in developing more sophisticated issues, ideas, and questions as well as skills in working with a variety of media. The study of concepts through aesthetics, art history, art criticism, and art production are included in classroom projects. Each student will create a portfolio that illustrates development of ideas and design fundamentals that may be carried forward to Art 3.

9140 ART III

Grades: 10-12 **1 Credit**

PREREQUISITE: Art II

This course is designed to expand students' knowledge, skill development, and independent thinking in both two- and three-dimensional media. Students build a unique style and a portfolio that reflects personal investigation of ideas or themes. Students will also keep a digital sketchbook to document/reflect on their artmaking process.

9147 ART IV

Grades: 11-12 **1 Credit**

PREREQUISITE: Art III

This advanced course provides the opportunity for students to develop a portfolio that reflects personal investigation of an idea or theme. Students will develop artwork that exhibits quality, thematic development, breadth of experience, and technical skill. The course will provide in-depth and independent study of media, techniques, processes, aesthetics, art criticism, and art history.