# 2021–2022

**Montgomery County Public Schools**

# HIGH SCHOOL COURSE BULLETIN

**FOR STUDENTS GRADUATING IN 2025**
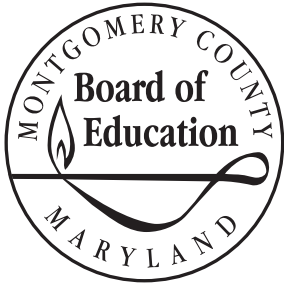
http://coursebulletin.montgomeryschoolsmd.org/

**GO GREEN!!**

**KEEP THIS BULLETIN**
through 12th Grade

Maryland's Largest School District

**MONTGOMERY COUNTY PUBLIC SCHOOLS**

## VISION

*We inspire learning by providing the greatest public education to each and every student.*

## MISSION

*Every student will have the academic, creative problem solving, and social emotional skills to be successful in college and career.*

## CORE PURPOSE

*Prepare all students to thrive in their future.*

## CORE VALUES

*Learning
Relationships
Respect
Excellence
Equity*

# 2021–2022

**Montgomery County Public Schools**

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**FOR STUDENTS GRADUATING IN 2025**

Maryland's Largest School District

**MONTGOMERY COUNTY PUBLIC SCHOOLS**

January 2021

Montgomery County Public Schools (MCPS) is committed to ensuring that every student graduates from high school prepared for college and career success. Our high schools offer a wide variety of classes and programs designed to prepare you for the future challenges of college and the workplace. This *2021–2022 High School Course Bulletin* presents the extensive range of exciting courses and programs offered in MCPS high schools. Please use the information in the bulletin as you take the opportunity to discuss the academic and career paths you want to explore with your parents/guardians, teachers, and counselor. These conversations will guide you as you select courses to plan a learning experience that will challenge and engage you. For additional information about the high school curriculum, please visit *https://www.montgomeryschoolsmd.org/curriculum/highschool/index.aspx*.
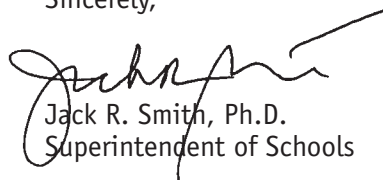
In addition, we ask that you reference your Naviance Student *High School Graduation, College and Career Planner* as you are selecting your classes. The planner allows you to determine whether the courses you are taking satisfy graduation/career readiness education requirements so that you are college and career ready. Moreover, the planner and your Naviance Student portfolio provide an opportunity for you to explore career interests and educational and professional options. If you have any questions about the *High School Graduation, College and Career Planner*, please contact your school counselor.

Each high school's website may be accessed at *www.montgomeryschoolsmd.org/schools/* and can be another helpful resource in addition to the information in this bulletin. The information presented on these sites provides an overview of each school, including detailed descriptions of application and career readiness programs of study offered in MCPS.

MCPS is fortunate to have highly competent and dedicated teachers, principals, school counselors, and support staff at our high schools. Preparing you for your future as a productive citizen in a global society is a responsibility we take seriously. We invite you to commit yourself to your studies with the same zeal and enthusiasm.

I urge you to enroll in challenging and rigorous courses in pursuit of your personal goals and extend my best wishes for your success as you prepare for the exciting and rewarding experiences ahead.

Sincerely,

Jack R. Smith, Ph.D.
Superintendent of Schools

# Contents

## LEGEND OF COURSE TYPES

| | |
|---|---|
| **AL** | Advanced-Level |
| **AP** | Advanced Placement |
| **CM** | Certificate of Merit |
| **DP** | Double Period |
| **FA** | Fine Arts |
| **H** | Honors |
| **HSA** | Maryland High School Assessment |
| **IB** | International Baccalaureate |
| **NCAA** | NCAA Initial Eligibility Clearinghouse Approved Core Course |
| **POS** | Program of Study (formerly Career Pathway Program) |
| **NGSS-BC** | Next Generation Science Standards Biology Science Credit |
| **NGSS-PC** | Next Generation Science Standards Physical Science Credit |
| **NGSS-SC** | Next Generation Science Standards Science Credit |
| **TE** | Technology Education |
| **TP** | Triple Period |
| 🎓 | Content-area Graduation Requirements |

# Preface

*This bulletin includes specific requirements for graduation. Students graduating in 2025 should keep this copy of the reference for graduation requirements.*

The *2021–2022 Montgomery County Public Schools (MCPS) High School Course Bulletin* provides students and parents/guardians with information about high school courses, programs, and career readiness programs of study. This bulletin contains information about graduation requirements, required state assessments, internships, opportunities for dual enrollment in college, and special programs.

Course selection in high school is critical to the realization of career and higher-education goals. Students should talk to their teachers and school counselor about the courses they need to meet their individual goals.

MCPS offers several hundred interesting and rewarding courses that help prepare students for the demands of the postsecondary world of college and careers. The *2021-2022 MCPS High School Course Bulletin* contains all approved courses offered in MCPS. Each MCPS high school offers a wide selection of these courses. Students and parents/guardians should work together to review the course offerings provided at their school, the graduation requirements, and other information in this bulletin. Course descriptions and additional course information are at *http://coursebulletin.montgomeryschoolsmd.org/Home/Parents*.

Throughout this bulletin, you will find URLs directing you to MCPS websites that contain course descriptions, program information, and Montgomery County Board of Education policies or MCPS regulations. In addition, you and your child should review together the *MCPS Student Code of Conduct, Student's Guide to Rights and Responsibilities in MCPS, Guidelines for Respecting Religious Diversity, and Guidelines for Student Gender Identity* found at *www.montgomeryschoolsmd.org/students/rights/* as well as your individual school's *Code of Conduct*.

All course bulletin information is available online. To access the online course bulletin, go to *www.montgomeryschoolsmd.org*, click on Parents, then High Schools, then High School Course Bulletin; or go directly to *http://coursebulletin.montgomeryschoolsmd.org/Home/Parents*.

## MARYLAND DIPLOMA REQUIREMENTS

The state of Maryland authorizes one diploma for all high school graduates, based upon successful fulfillment of four categories of requirements: enrollment, course credit, student service learning (SSL), and Maryland assessments. Students must satisfactorily complete four years beyond Grade 8 to meet the enrollment requirement. All other requirements are summarized in the table below. Please consult the online MCPS course bulletin for 2021-2022 at *http://coursebulletin.montgomeryschoolsmd.org/Home/PlanningTools* or your school counselor for further information.

### College and Career Readiness

In 2013, the Maryland General Assembly passed the College and Career Readiness and College Completion Act (CCRCCA), aimed at ensuring that all students are prepared for credit-bearing course-work in college and for living-wage careers. The CCRCCA includes the requirement that all students be assessed for college and career readiness in English and mathematics by the end of Grade 11, using one of several college and career readiness assessments. Students who do not meet the college and career ready standard in English and mathematics by the end of Grade 11 will be required to enroll in a transition course or other instructional opportunity during Grade 12, in preparation for reassessment. After completing the transition course or instructional opportunity, students must be reassessed by the end of Grade 12. School counselors and staff will work closely with students to determine the best assessment to take in Grade 11 as well as transition course options and reassessment during Grade 12, if necessary. More information about college and career readiness for the graduation class of 2025 is available at *www.montgomeryschoolsmd.org/info/CCRCCA/.*

### Course Credits

Students shall be enrolled in Montgomery County Public Schools (MCPS) and have earned a minimum of 22 credits that include the following (unless a preapproved MCPS alternative is satisfied):

| MCPS GRADUATION REQUIREMENTS | |
| --- | --- |
| **ENGLISH** | **4 credits** |
| **FINE ARTS** | **1 credit** designated (**FA**). Courses in art, dance, drama/theater, and music that satisfy the **FA** requirement are designated in the course bulletin. |
| **HEALTH EDUCATION** | **0.5 credit** |
| **MATHEMATICS** | **4 credits**, including 1 with instruction in algebra aligned with the Maryland High School Assessment for algebra or one or more credits in subsequent mathematics courses for which Algebra I is a prerequisite, and 1 with instruction in geometry aligned with the content standards for geometry.<br><br>**NEW STATE REQUIREMENT FOR STUDENTS GRADUATING IN 2018 AND LATER:** Students graduating in 2018 and later must be enrolled in a math course in each year of high school. This may result in students earning more than 4 credits in math for graduation. |
| **PHYSICAL EDUCATION** | **1 credit** |
| **SCIENCE** | **3 Next Generation Science Standards (NGSS) credits,** including 1 life science credit (**BC**) and 1 physical science credit (**PC**). Courses satisfying this requirement are designated in the course bulletin. |

| MCPS GRADUATION REQUIREMENTS | | |
| --- | --- | --- |
| **SOCIAL STUDIES** | **3 credits**, 1 U.S. History credit; 1 World History credit; and 1 National, State, and 1 Local Government credit required. | |
| **TECHNOLOGY EDUCATION (TE)** | **1 credit** designated **TE**. Courses satisfying this requirement are designated in the course bulletin. | |
| **ELECTIVES:** The additional credits required for graduation may be fulfilled by 1 of the following three options | **OPTION 1** | **OPTION 2** |
| | **2 credits** in a world language, which may include American Sign Language **AND 2.5 credits** in elective courses | Complete a state-approved program of study (POS) **AND a minimum of 0.5 credit** in elective courses or more depending on POS |
| **STUDENT SERVICE LEARNING (SSL)** | 75 service-learning hours<br>The SSL requirement is prorated for students enrolling in MCPS for the first time after Grade 6. | |

**Up-to-date graduation requirements by class may be found at www.montgomeryschoolsmd.org/curriculum/graduation-requirements.aspx.**

### Enrollment

Students must satisfactorily complete four years of school beyond Grade 8. (For exceptions, see Alternatives to Four-year Enrollment.) Beginning with students entering ninth grade for the first time in the 2014-2015 school year or later, each student shall enroll in a mathematics-based course each year the student attends a Maryland public high school, up to four years. This requirement is not waived for students enrolled in high school mathematics courses in middle school. MCPS courses that satisfy this requirement are published annually in this course bulletin. Students may also fulfill this requirement via dual enrollment, as set forth in MCPS Regulation ISB-RA, *High School Graduation Requirements,* at *www.montgomeryschoolsmd.org/departments/policy/pdf/isbra.pdf.*

### Immunization Requirements

Beginning with students who entered Grade 7 in the 2020–2021 school year, or who were new to MCPS and in Grades 8–12, must receive one dose of the Tetanus-diptheria-acellular pertussis (Tdap) vaccination and one dose of the Meningococcal Conjugate Vaccination (MCV4) before the first day of school. These vaccinations are required by the state of Maryland State for school attendance. Acceptable proofs of vaccinations are a computer-generated vaccination record from the student's healthcare provider or the Maryland Department of Health Immunization Certificate (Form 896), found at *https://www.montgomeryschoolsmd.org/departments/forms/pdf/mdh%20896.pdf*, that is completed by the healthcare provider.

### Maryland High School Comprehensive Assessment Program

The Maryland High School Comprehensive Assessment Program (MCAP) consists of tests developed for or adopted by MSDE that are aligned with and measure a student's skills and knowledge as set forth in the content standards for specified courses. The term "MCAP" covers state and federal mandated assessments in English Language Arts/Literacy, Mathematics, Science, and Government at the high school level. Students take these assessments as they complete the corresponding courses. MCAP also includes the Alternate Assessments for select students.

| MARYLAND COMPREHENSIVE ASSESSMENT PROGRAM (MCAP) HIGH SCHOOL ASSESSMENT (HSA) REQUIREMENTS[1,2,3,4] These assessment requirements are subject to change by Maryland State Department of Education (MSDE). ||
|---|---|
| **ALGEBRA 1** | Course credit earned in Algebra 1 **AND** <br>• Pass the Algebra 1 assessment |
| **ENGLISH 10** | Course credit earned in English 10 or equivalent, or English 10 for ELs **AND** <br>• Pass the English Language Arts/Literacy assessment |
| **GOVERNMENT** | Course credit earned in National, State, and Local Government or equivalent **AND** <br>• Pass the Government assessment |
| **SCIENCE** | Course credit earned in Biology or equivalent, **AND** <br>• Pass the High School Science assessment |

[1] *Substitute Test: Students earning qualifying scores on substitute tests (AP/IB) will meet the MCAP HSA requirement in that content area.*

[2] *Transfer Credit: Students transferring from outside Maryland public schools may be eligible to meet some MCAP HSA content-area requirements with transfer credit.*

[3] *Combined test score options are available for the assessments.*

[4] *Bridge Plan: The Bridge Plan is an alternative means of meeting the MCAP HSA graduation requirement. With the Bridge Plan, students demonstrate content mastery by completing projects when they have difficulty passing the traditional test.*

For additional information regarding MCPS graduation requirements visit *www.montgomeryschoolsmd.org/curriculum/graduation-requirements.aspx.*

## Promotion Regulation

MCPS Regulation JEB-RA, *Placement, Promotion, Acceleration, and Retention of Students* (*www.montgomeryschoolsmd.org/departments/policy/pdf/jebra.pdf*), requires that high school students earn 5 credits each year in order to be promoted, including specific required credits in English, mathematics, science, and social studies, as indicated in the chart below.

| End of: | Total Credits Needed for Promotion to Next Grade | TOTAL CREDITS IN REQUIRED COURSES |||||
|---|---|---|---|---|---|---|
| | | Math | English | Science | Social Studies | Other Courses— See Options Required for Graduation |
| Grade 9 | 5 | 1 | 1 | 0 | 0 | 3 |
| Grade 10 | 10 | 2 | 2 | 1 | 1 | 4 |
| Grade 11 | 15 | 3 | 3 | 2 | 2 | 5 |

## Maryland High School Certificate of Program Completion

This certificate is awarded only to students with disabilities who cannot meet the requirements for a diploma, but who meet the standards set forth in the Code of Maryland Regulations §13A.03.02.09, and MCPS Regulation ISB-RA, *High School Graduation Requirements*, found at *https://www.montgomeryschoolsmd.org/departments/policy/pdf/isbra.pdf*. All students will be considered diploma-bound and will be assessed and graded accordingly, unless and until an Individualized Education Program (IEP) team determines that a student will be instructed, assessed, and graded on Alternative Learning Outcomes that are aligned with the MCPS curriculum, leading to a Certificate of Program Completion. The IEP team must obtain written consent from the parent/guardian of the student with a disability if the IEP proposes to enroll the student in an alternative education program that does not issue or provide credits toward a Maryland high school diploma.

## Montgomery County Public Schools Certificate of Merit

In addition to the Maryland high school diploma, students who meet the following requirements may be awarded the MCPS Certificate of Merit, a diploma endorsement:

• **Advanced Courses**—Students must earn at least 12 credits in advanced courses designated by MCPS as applicable to the Certificate of Merit (CM). CM courses contribute to a weighted grade point average only when the course also is identified as Advanced Level (AL). All courses to be counted toward the Certificate of Merit must be taken for a letter grade.

• **Mathematics Requirement**—Students must successfully complete and/or receive credit for an MCPS Algebra 2 course.

• **Cumulative Grade Point Average**—Students must obtain at least a 3.0 unweighted cumulative grade point average.

## Maryland Seal of Biliteracy

Maryland Seal of Biliteracy is awarded to high school graduates who can function in two or more languages and are equipped with the knowledge and skills to participate successfully in college, careers, and a diverse 21st century society. The Maryland Seal of Biliteracy is a diploma endorsement, authorized by Maryland law, that recognizes a student's high level of proficiency in listening, speaking, reading, and writing in one or more languages other than English. To receive a Maryland Seal of Biliteracy, a student must do the following:

• Pass the Maryland High School Assessment in English 10; **AND**

• Demonstrate Intermediate High proficiency in listening, speaking, reading, and writing in a language other than English, as measured by assessments that are aligned to ACTFL (the American Council on the Teaching of Foreign Languages) proficiency guidelines.

For more information about the approved assessments, please visit the website *https://www.montgomeryschoolsmd.org/curriculum/office/seal-of-biliteracy.aspx.*

## Courses and Credits

Each MCPS high school provides a comprehensive program of studies that enables all students to earn required graduation credits. All high school courses are one semester long. All courses satisfying graduation requirements must be taken for a letter grade. Upon completion of each semester's work, students earn credit in each course taken—0.5 credits for successful completion of a single-period course, 1 credit for a double-period course, and so on. Year-long courses usually have the same name for the two semesters with the title of the first semester followed by "A" or "1" and the second by "B" or "2." Generally, the first semester of a course is a prerequisite for the second semester.

## Student Service Learning

The Student Service Learning (SSL) program in MCPS promotes a culture of student involvement and student responsibility through civic engagement. Service learning is a graduation requirement in Maryland. MCPS students must complete a minimum of 75 service-learning hours to graduate. They may begin fulfilling this requirement in the summer after Grade 5 and continue to accrue SSL hours through high school. Students who earn 260 or more SSL hours receive a **Certificate of Meritorious Service** at the time of graduation. Preparation, action, and reflection are the three phases of service learning that distinguish SSL from traditional volunteering and community-service efforts.

Service learning hours are earned through the following:

- **School Courses**—Successful completion of specific courses identified in this course bulletin where the three phases of SSL achieve curricular objectives.
- **School Clubs**—Fully participating and completing the three phases of service learning in activities promoted by school-sponsored clubs and organizations.
- **Community Organizations and Opportunities (must meet MCPS SSL guidelines)**—Fully participating in opportunities with community organizations following the MCPS SSL guidelines listed on the MCPS SSL website, found at *www.mcps-ssl.org*. MCPS SSL opportunities are identified on the Montgomery County Volunteer Center (MCVC) web page with the MCPS SSL icon, found at *www.montgomeryserves.org*. Students also may seek approval for other types of service learning by submitting MCPS Form 560-50, *Individual Student Service Learning Request*.

All activities for which SSL hours are desired must occur in a public place, be secular in nature, and be supervised by an adult representative from a nonprofit, tax-exempt organization. Parents/guardians and relatives may not supervise a student directly. One SSL hour is awarded for every one hour of service outside of the instructional day, with a maximum of 8 hours in a 24-hour period. MCPS Form 560-51, *Student Service Learning Activity Verification*, is required to document all activities for which SSL hours are desired. SSL FAQs and more information is available at the MCPS SSL website *www.mcps-ssl.org*| and the MCVC website *www.montgomeryserves.org*. For individual SSL questions, please contact the SSL coordinator in any middle or high school.

## High School Credit for Middle School Students

**Beginning with students who entered Grade 6 in the 2018–2019 school year and will be entering high school in 2021-2022:**

Grades and credit earned for high school courses taken in middle school will be included on the high school transcript, but the grade points will not be automatically calculated into the cumulative GPA unless requested by students and parents/guardians. Students and parents/guardians will be notified of procedures to opt to include such courses in the cumulative GPA once they are in high school, no earlier than after the first semester of Grade 9 when a cumulative GPA has been established with multiple courses. This approach will help students and families see the impact of including such courses on the cumulative GPA once a greater sample of courses and grades has been established. Students and parents/guardians will also have the opportunity to hold off on making the request until at least Grade 11, so has to consider the full impact with multiple years of high school courses.

Additional information about secondary grading can be found here: *https://www.montgomeryschoolsmd.org/info/grading/report-cards-secondary.aspx*.

Middle school students must meet the same requirements as high school students by earning a final grade of A, B, C, or D each semester. Additional information is in MCPS Regulation IKC-RA, *Grade Point Averages (GPA) and Weighted Grade Point Averages (WGPA)*, found at *www.montgomeryschoolsmd.org/departments/policy/pdf/ikcra.pdf*.

## Honors, Advanced-Level, Advanced Placement, and International Baccalaureate Courses

Honors **(H)**, Advanced-Level **(AL)**, Advanced Placement **(AP)**, and International Baccalaureate (IB) courses provide opportunities for students to pursue rigorous and challenging studies. Students seeking an IB diploma or participating in a certificate program must meet the requirements of the program in addition to the MCPS

requirements for graduation. Teachers, counselors, and parents/guardians will work together to support each student's progress in these challenging courses.

- **Honors Courses**—Honors courses provide expectations and opportunities for students to engage in more rigorous and complex content and processes and to develop authentic products that reflect the student's understanding of key concepts. The curriculum in each Honors course includes appropriate adaptations for enriched learning to pursue in-depth studies that require abstract and higher-order thinking skills.
- **AL Courses**—AL courses are based on previous achievement in a sequence of study. Advanced-level courses include appropriate adaptations for accelerated and enriched learning to pursue in-depth studies that require abstract and higher-order thinking skills.
- **AP Courses**—MCPS has developed courses that meet College Board guidelines to accompany the AP examinations. A qualifying score on an AP exam may earn the student college credit or advanced standing in the subject in college. All MCPS AP courses meet the requirements of and are approved by the College Board Audit Committee and include concepts and skills that help students prepare for the AP exams.
- **Process Changes for AP Exams**—Students will register for exams in the fall, the College Board is implementing exam fees for ordering late or canceling your exam:
- **Fall exam ordering**—AP exams must be ordered no later than November 15.
- **Fees for late orders or canceled exams**—The AP Exam fee will stay the same, but a $40 fee will apply for exams ordered after November 15 or canceled by March 1.
- **Criteria for Enrollment in Honors, Advanced-level, and AP Courses**—Multiple criteria such as mastery of course prerequisites, willingness to complete challenging assignments, previous grades, student interest, and teacher/counselor recommendations will be used to admit high school students to H, AL, AP, or IB classes. All students with the capability, motivation, or potential to accept the challenge of such a program will have an opportunity to do so.

# COURSE-RELATED INFORMATION
## Student Withdrawal from a Course

A student-initiated withdrawal may occur when the student and parent/guardian determine that withdrawal will be beneficial to the student. Additional information is in MCPS Regulation JEC-RA, *Student Withdrawals from Classes and School*, found at *www.montgomeryschoolsmd.org/departments/policy/pdf/jecra.pdf*. An eligible student's withdrawal (one who is 18 years of age or older or is emancipated) must be reviewed by the counselor and may be discussed with the parents/guardians. If the student is not an eligible student, the student's withdrawal request must be approved by the parent/guardian in writing, reviewed by the counselor, and discussed with the student to ensure that the student understands that withdrawing from the course may result in a possible delay in meeting graduation requirements. Then, the counselor's recommendation is forwarded to the principal for approval.

The student must be presented with alternatives to withdrawing from a course. The student may transfer into another course within the same subject area for which the student has had adequate academic preparation. If no such alternative is available, the student may transfer into an appropriate elective course. Administrators/designees have discretion to adjust student schedules if necessary and as appropriate.

- If a student withdraws from a course before the end of the 25th day of the semester, no notation is made on the student's permanent record or report card.

- If a student withdraws after the 25th day of the semester, the date of the withdrawal and the achievement attained at the time of withdrawal will be entered on the report card and permanent record.

Additional information about withdrawal and student eligibility for extracurricular activities is in MCPS Regulation IKC-RA, *Grade Point Averages (GPA) and Weighted Grade Point Averages (WGPA)*, found at *www.montgomeryschoolsmd.org/departments/policy/pdf/ikcra.pdf*, and in MCPS Regulation IQD-RA, *Academic Eligibility for High School Students Who Participate in Extracurricular Activities*, found at *www.montgomeryschoolsmd.org/departments/policy/pdf/iqdra.pdf*.

## Other Provisions for Earning Credit
In addition to earning credits during the regular school day and year, students may earn high school credits through summer school, extended-day learning opportunities, work-experience programs, online courses, and college courses. **Advance permission from the principal or designee** is required in all cases involving other provisions for earning credit.

Online courses must be approved by MSDE and MCPS. See the list of online courses approved by MCPS for credit toward graduation at *www.montgomeryschoolsmd.org/departments/onlinelearning/*.

It is critical that students and their parents/guardians consult with academic advisors/counselors prior to registering for courses for which they intend to obtain credits to meet high school graduation requirements. More information about other provisions for earning credit are discussed in MCPS Regulation ISB-RA, *High School Graduation Requirements*, found at *www.montgomeryschoolsmd.org/departments/policy/pdf/isbra.pdf*.

## Alternatives to Four-year Enrollment
In recognition of the fact that four-year enrollment in a public high school may not serve the best interests of some students, alternatives are available. Requirements include advance permission from the principal or designee; an alternative plan developed, with enough lead time to allow a decision to be made at least one full semester prior to anticipated enrollment in a specific course or program; and a waiver. Approval may be made contingent on the student's acceptance to an approved college, vocational, technical, or other postsecondary school program. Required forms, reasons for which waivers are approved, and additional information about alternatives to four-year enrollment are discussed in MCPS Regulation ISB-RA, *High School Graduation Requirements*, found at *www.montgomeryschoolsmd.org/departments/policy/pdf/isbra.pdf*.

## Taking Courses Not Available at the Student's Home School
Students who wish to take courses not available at their home school must apply through the counseling office at their home school.

## Attendance
A commitment to school attendance, on the part of both students and parents/guardians, is an essential component of a high-quality learning experience. Parents/guardians and school personnel are expected to do everything possible to ensure each student's regular attendance. Students should attend all scheduled classes and approved educational activities and are responsible for completing all assigned work on time. Students should be enrolled in a full-day

program or spend a comparable period of time in an alternative education program or activity approved by the student's parent/guardian and principal. See MCPS Regulation JEA-RA, *Student Attendance*, at *www.montgomeryschoolsmd.org/departments/policy/pdf/jeara.pdf* and G*uidelines for the Continuing Education for Pregnant and Parenting Students*, at *www.montgomeryschoolsmd.org/departments/policy/pdf/ioera.pdf*.

# GRADING AND REPORTING
The Board is committed to maintaining rigorous performance and achievement standards for all students and to providing a fair process for evaluating and reporting student progress that is understandable to students and their parents/guardians and relevant for instructional purposes. Board Policy IKA, *Grading and Reporting* (*www.montgomeryschoolsmd.org/departments/policy/pdf/ikara.pdf*), and accompanying MCPS Regulation IKA-RA, *Grading and Reporting* (*www.montgomeryschoolsmd.org/departments/policy/pdf/ikara.pdf*), set forth expectations and guidance. The office of the Associate Superintendent of Curriculum and Instructional Programs publishes procedures at *www.montgomeryschoolsmd.org/info/grading/*.

## Procedures for Grading
Grading procedures will be applied consistently within and among schools. Grading practices must include clear and timely communication, alignment with curriculum, accurate reflection of student achievement, and fair representation of student performance. Grading practices must be fair and manageable and support effective teaching and learning. Grades on report cards reflect academic achievement in relation to course expectations, as outlined in the MCPS curriculum. Extra credit may not be used. Course specific procedures for grading are defined, used consistently, and explained clearly to students and parents/guardians in writing at the beginning of a semester or school year. Additional information about grading and reporting can be found at *https://www.montgomeryschoolsmd.org/departments/policy/pdf/ikara.pdf*.

## Districtwide Assessments
Required assessments administered districtwide are one component of the body of evidence.
- A districtwide assessment is required to be given at designated times in identified grade levels and identified middle and high school courses.
- In middle and high school courses for which there are districtwide assessments, selected assessments may be calculated as 10 percent of the marking period, as directed by the Associate Superintendent of Curriculum and Instructional Programs office.

## Reporting Student Progress
Teachers will provide students and parents/guardians with information about achievement throughout the marking period. This feedback may take several forms, including the following:
- Report cards
- Interims/progress reports
- Online grade reports
- Parent conferences
- Informal methods of communication
- Teacher feedback

## Credit/No Credit Grading Option

- The Credit/No Credit grading option may be used only in courses not specifically required for graduation by MSDE or MCPS.
- Courses taken using the Credit/No Credit option cannot be applied toward a Certificate of Merit.

## Grade Point Average (GPA) and Weighted Grade Point Average (WGPA)

Only final course grades and credit reported on high school transcripts are used in determining GPA and WGPA, in accordance with the procedures set forth in MCPS Regulation IKC-RA, *Grade Point Averages and Weighted Grade Point Averages* (*www. montgomeryschoolsmd.org/departments/policy/pdf/ikcra.pdf*). To determine WGPA, an additional quality point will be added to grades of A, B, and C in all Honors, AL, and AP courses only.

A Marking Period Average (MPA), used in determining academic eligibility, is shown on student report cards. The MPA is not cumulative and is not used to establish the GPA or WGPA.

MCPS does not rank students. See additional information about grading and reporting at *https://www.montgomeryschoolsmd.org/info/grading/*.

## Repeating a Course to Earn a Higher Grade

Any student who completes a high school course may retake the course for a replacement grade. Grades and credits for courses retaken will be treated as follows, for computing the GPA and WGPA: a) a course may be retaken, no matter the final grade; b) the highest of the grades received shall be entered on the student's transcript and shall be used for the purpose of computing GPA/WGPA; c) students may only replace a course with a course of the same or comparable course code, as authorized by the Associate Superintendent of Curriculum and Instructional Programs; or d) if space in a class is limited, students taking a course for the first time have priority for placement in the class over students retaking the course. Upon completion of the course, their official transcript and GPA/WGPA will reflect only the higher mark earned. Further information can be found in MCPS Regulation IKC-RA, *Grade Point Averages (GPA) and Weighted Grade Point Averages (WGPA)*, found at *www.montgomeryschoolsmd.org/departments/policy/pdf/ikcra.pdf*, and MCPS Regulation IKA-RA ,Grading and Reporting, found at *https://www.montgomeryschoolsmd.org/departments/policy/pdf/ikara.pdf* or by contacting the student's counselor or College and Career Readiness and Districtwide Programs, 240-740-3941.

## School Library Media Program

As a teacher and collaborator, school library media specialists contribute to the development of students who are equipped with the knowledge and skills to read, evaluate, and utilize print and digital resources for curricular and personalized learning needs.

The guiding principles for an instructional approach to a robust school library media program:

- School library media specialists support literacy and student achievement
- School library media specialists are teachers and instructional partners
- School library media programs provide unique virtual learning environments
- School library media staff members advocate for equity and foster connections

School library media specialists enrich the learning environment by expertly vetting and sharing award-winning books and appropriate approved digital tools by providing updated collections and embracing the integration of innovative technologies. In addition, school library media specialists share information related to emergent issues in regard to accessibility, privacy, digital ethics, and copyright guidance.

A well-rounded school library media program maximizes student and teacher access to resources, programming, and instruction and provides opportunities to immerse all students in literacy-rich environments. School library media programs support students with the access and use of online resources, including eBooks (Sora, Capstone Interactive, Montgomery Public Library eBooks, etc.).

Whether independently or in collaboration with other teachers, school library media specialists must continue to ensure that students are able to efficiently, effectively, and ethically access and utilize print and digital resources for lifelong learning in multiple literacies. Instruction and collaboration must continue in distance learning, hybrid models, or in person.

Information literacy standards are embedded in content areas. Information literacy skills are grounded in classroom content because, when taught in isolation, they do not provide an authentic learning experience that is relevant to students. School library media specialists can be added as co-teachers to the classrooms in order to support any content area with information literacy standards. Digital citizenship is a component of information literacy and should be taught in the context of a larger lesson that requires practice in safe searching, safe sharing of information, etc. for Grades 6–10, with a minimum of 3.75 hours of instruction for the year.

## Academic Eligibility for Participation in Extracurricular Activities

As a district committed to nondiscrimination, equity and cultural responsiveness, the Board of Education seeks to balance the state and collegiate expectations with its interest in making extracurricular activities including interscholastic sports, accessible to as many students as possible. Policy-IQD *Academic Eligibility for Extracurricular Activities* is currently under review. Additional information about Policy IQD can be found here *https://news.montgomeryschoolsmd.org/staff-bulletin/board-seeking-comment-on-two-policies/*

## National Collegiate Athletic Association (NCAA) Eligibility Center

The National Collegiate Athletic Association established the NCAA Eligibility Center to serve as the authorizing group for the final review and approval of core courses for freshmen college students who want to participate in intercollegiate athletics in NCAA Division I-A, I-AA, and II colleges and universities. The NCAA Eligibility Center Approved Core Courses are identified in the course bulletin with the symbol NCAA. In all cases, the list of eligible courses available on the NCAA Eligibility Center website represents the final determination of acceptable core courses. To learn more about NCAA Approved Core Courses or about NCAA Freshmen Eligibility Standards, contact the local school resource counselor and visit the NCAA-IEC website at *http://www.ncaa.org/student-athletes/future*. Students may download the NCAA student document at *www.ncaapublications.com/productdownloads/CBSA17.pdf*.

# Montgomery County Public Schools
## Sample Student Planner

This is a sample pathway schedule that may be tailored to meet a student's individual needs. All students must take prescribed English, math, science, social studies, and other courses required for a Maryland high school diploma.

| GRADE 9 | GRADE 10 | GRADE 11 | GRADE 12 |
|---|---|---|---|
| **ENGLISH (4 credits)** | | | |
| English 9/Honors | English 10/Honors | English 11/Honors/IB | English 12/Honors/IB |
| **MATHEMATICS (4 credits)** | | | |
| Algebra 1, Geometry/Honors, **or** Algebra 2/Honors | Geometry/Honors, Algebra 2/Honors, **or** Precalculus/Honors | Algebra 2/Honors, Precalculus/Honors **or** AP Calculus AB/BC **or** Statistics | Precalculus/Honors, AP Calculus AB/BC **or** AP Statistics/College Level Math Beyond AP Calculus |
| **SCIENCE (3 credits)** | | | |
| NGSS Biology, NGSS Physics, Astronomy with Physics **or** AP Physics 1 | NGSS Chemistry | NGSS Physics, Astronomy with Physics, NGSS Biology **or** AP/IB Science | [3]Elective Coursework |
| **SOCIAL STUDIES (3 credits)** | | | |
| U.S. History/Honors AP | National, State & Local Government/Honors/AP | Modern World History/Honors/AP/IB | [3]Elective Coursework |
| **FINE ARTS (1 credit)** | | | |
| Fine Arts **or** Dance/Music/Theatre/ Visual Arts **OR** | Fine Arts **or** Dance/Music/Theatre/ Visual Arts | [3]Elective Coursework | [3]Elective Coursework |
| **TECHNOLOGY EDUCATION (1 credit)** | | | |
| [2]Technology Education **OR** | [2]Technology Education | [3]Elective Coursework **or** Elective Graduation Option | [3]Elective Coursework **or** Elective Graduation Option |
| **HEALTH/PHYSICAL EDUCATION (0.5/1 credit)** | | | |
| Physical Education (1.0) | Health Education (0.5)/ [3]Elective Coursework | [3]Elective Coursework **or** Elective Graduation Option | [3]Elective Coursework **or** Elective Graduation Option |
| **ELECTIVE OPTIONS Students can fulfill graduation requirements by one of the two options** | | | |
| [1]World Language | [1]World Language | | |
| [4]Career Readiness POS | [4]Career Readiness POS | [4]Career Readiness POS | [4]Career Readiness POS |

[1] **World Language:** Choose from languages available at your school. Students may fulfill World Language graduation option in middle school.
[2] **Technology Education:** Students may fulfill Technology Education graduation requirement in middle school.
[3] **Electives:** Elective courses are available for each content area list above and varies at each high school. Please check with the school for course availability.
[4] **Career Readiness POS:** Career Readiness POS varies at each high school. Please check with the school for program availability.

# MCPS COUNTYWIDE/REGIONAL PROGRAMS

MCPS offers a range of high school programs to meet the unique interests or programmatic needs of students. Programs are offered at the local high school level or through an application process at the regional or countywide level. These programs may include enriched/accelerated, thematic, career readiness, or dual enrollment.

## Local School Programs

In addition to offering a comprehensive high school program, a number of high schools have created programs that integrate a specific focus or distinguishing theme with skills, concepts, and instructional strategies of some portion of a school's curriculum. The theme or focus becomes the vehicle for teaching the traditional high school curriculum in a fresh, interesting, and challenging way. All high schools offer a wide range of robust college and career programs that prepare students for college and the workforce. For additional information about local programs offered at a student's home school, please visit the home school website.

## Career Readiness Programs of Study (POS)

Programs of Study **(POS)** are state-approved programs that satisfy the Career Readiness graduation option requirements and are designated by **POS** in this bulletin. Each program is designed to help students acquire the specialized knowledge, skills, attitudes, and work habits required for employment and postsecondary education.

Students seeking to enroll in a POS with a work-based learning component may be required by the employer or sponsoring organization to provide appropriate documentation that may include a social security number and/or proof of citizenship/green card. Please review program information and POS requirements carefully for specific work-based learning component guidelines.

## MCPS Regional Career Readiness Programs

Some career readiness POS are offered to high school students through a regional choice model, to ensure access to programs when not offered in the student's home school.

These programs are available at designated high schools and offer limited seats to students from designated regions of the county. Student participation is determined by an application process. Grades 8–11 students from designated regions of the county are eligible to apply to the following application programs:

- Fire Science and Rescue—Home School and MC Public Safety Training Academy
- Flight and Aircraft Systems at Col. Zadok Magruder HS
- Network Operations & Information Technology (P-TECH) at Clarksburg HS
- Project Lead The Way Biomedical Sciences at Gaithersburg HS
- Project Lead The Way Biomedical at Wheaton HS
- Project Lead The Way Engineering at Wheaton HS
- Seneca Valley Regional Programs
- Wheaton/Edison Regional Programs

Extensive information about MCPS career readiness programs of study is available online at *www.montgomeryschoolsmd.org/career-readiness/*. For more information about special programs visit *www.montgomeryschoolsmd.org/curriculum/specialprograms/high/*.

## Regional College and Career Programs at Wheaton/Thomas Edison High School of Technology (TEHST) and Seneca Valley High School

Regional College and Career programs provide all MCPS students with the opportunity to co-enroll in advanced academic, technical, and career programs. The mission of college and career readiness programs is to provide students with state-of-the-art technological, academic, and interpersonal skills needed to achieve excellence in their chosen fields of study. The variety of career readiness programs offered allow students to explore and experience traditional and nontraditional career options and to prepare for college and a wide range of expanding and challenging postsecondary options. Students enroll in college and career readiness programs through their home school and take courses at both the home school and at the Regional College and Career Program location. Students may also be eligible to apply to a full-time comprehensive regional program at a college and career readiness programs location. Bus transportation is provided. All programs offered at Regional College and Career Program sites are state-approved and meet the career readiness graduation option requirements for students.

## Foundations Programs

The Montgomery County Student Foundations Office serves as a liaison between the business/professional community and MCPS, by coordinating four separate nonprofit educational foundations that prepare students for a wide range of postsecondary options within the automotive, construction, information technology and computer science, and the hospitality and restaurant management industries. Programs provide instruction in classroom and laboratory settings with state-of-the-art technology and authentic, real-world experiences for students through rigorous curriculum, career programs of study, industry certification opportunities, community business partnerships, entrepreneurial projects,scholarships/awards, SSL hours, and articulation agreements through which students may earn college credit. Additional information is at *www.montgomeryschoolsmd.org/curriculum/foundations/*| or contact the Foundations Office at 240-740-2050.

- **Automotive Trades Foundations Programs—**the following high schools offer Automotive Trades Foundation programs: Damascus, Gaithersburg, Seneca Valley, and TEHST. Three student-run car sales per school year are held, selling more than 2,000 renovated vehicles to date. Students donate one renovated vehicle yearly to a deserving Montgomery County charity organization.
- **Construction Trades Foundations Program—**Construction Trades Foundation programs are located at TEHST and Seneca Valley HS. Students design, construct, and market student-built houses. Forty-one houses have been built and sold thus far in Montgomery County. Students currently are constructing the 42nd home.
- **Information Technology and Computer Science Programs—** Information Technology programs in computer repairs and networking (Network Operations) are located at Clarksburg High School, TEHST, and Seneca Valley High School in the 2020-2021 school year. Students in these programs refurbish, market, and sell donated computers to the community and donate a lab each year to a deserving Montgomery County nonprofit organization. Cisco Networking Academies are located in seven high schools: Bethesda-Chevy Chase, Damascus, Gaithersburg, Quince Orchard, Seneca Valley, Springbrook, and Wootton. Students in all programs can earn valuable industry-standard CompTIA certifications and college credits and can obtain internships in the IT field. The Computer Science pathway, which includes a robotics unit, is offered in 25 high schools. Students can take two AP courses in the pathway as well as earn college credits and obtain internships. The Clarksburg Pathways in Network and Information Technology Program (P-TECH) is a dual-enrollment program that allows students to earn both an MCPS high school diploma and an Associate of Applied Science (ASS) degree from Montgomery College, at no cost, while in high school. This program is offered exclusively at Clarksburg High School, and the only entry point for this program is at the beginning of ninth grade.

- **Hospitality and Restaurant Management Program—**In 2019, the Foundation for Hospitality & Restaurant Management (FHRM) was established to develop and engage the hospitality and restaurant industry to partner with MCPS in support of the Academy of Hospitality and Tourism POS and the Professional Restaurant Management POS. In collaboration with the business community, the Foundation is in the process of reviewing and updating curriculum material, and identifying career-enriching experiences for students who want to study and learn about career opportunities within the hospitality industry.
- **Career Readiness Education Academy (CREA)—**The Career Readiness Education Academy (CREA) is an academic and career readiness program for older English Language Learners (ELLs) in MCPS. Students in CREA have the opportunity to prepare for the GED exam and earn industry certifications in their chosen field of study. Students are referred to CREA if they are at least 18 years old and unlikely to meet graduation requirements before turning 21 and/or if they are interested in pursuing an alternative pathway to a high school diploma via GED preparation. CREA offers both full-day and evening programs at Thomas Edison High School of Technology and Seneca Valley High School.

# The Visual Art Center (VAC) at Albert Einstein High School

Established in 1974, the VAC is a nationally recognized visual art program and offers students a broad perspective of the visual arts and deepens their understanding of the opportunities for art-related careers through exposure to art history, contemporary artists, and artwork. Any student who resides in Montgomery County and is currently enrolled in Grades 8–11 is encouraged to apply for acceptance into this magnet program, if they are interested in a rigorous portfolio-development program. The VAC program is open to applicants from all high school clusters in the county. Students may opt to take a combination of courses at their home high school and the VAC, or they may opt to transfer to Albert Einstein High School. Downcounty Consortium (DCC) resident students who have been assigned to Einstein through the choice process and have been accepted into the Visual Arts Center will be provided transportation from Consortia neighborhood stops. Students not assigned to Einstein HS are responsible for providing their own transportation. For more information go to *www.montgomeryschoolsmd.org/schools/ vac/*. For more information, contact the MCPS Visual Arts Center at 240-740-2700 or go to *www.montgomeryschoolsmd.org/schools/vac/*.

# High School Science/Mathematics/ Computer Science Magnet Program at Montgomery Blair HS and Poolesville HS

Recognizing that education is an individual experience that depends on the unique talents and interests of each person, the mission of the MCPS High School Science/Mathematics/Computer Science Magnet Program is to provide an environment in which each student's education is maximized by emphasizing the interrelationships among the disciplines, developing a repertoire of problem-solving techniques and pursuing both independent and collaborative research projects.

To realize this mission, the staff nurtures the special talents of its students, challenging them through a unique, diversified curriculum that fosters individualism, independent thinking, and self-confidence. Students construct their own knowledge base, learn problem-solving strategies that foster a multidisciplinary approach, and develop the ability to think precisely and creatively.

The curriculum is designed to enable each student to build a solid foundation in Grades 9 and 10. Core courses in these first two years

include physics, chemistry, Earth science, biology, two years of computer science, two years of mathematics, and an interdisciplinary course—Research and Experimentation for Problem Solving. During their junior and senior years, students have opportunities to go beyond traditional high school offerings with more than 25 special courses and independent research projects, while still meeting MSDE requirements (e.g., enrollment in mathematics).

Program descriptions, brochures, and applications are at *www. montgomeryschoolsmd.org/curriculum/specialprograms/high/magnet-science.aspx*.

# The International Baccalaureate (IB) Diploma Programs in MCPS

The International Baccalaureate Diploma Programme is a rigorous two-year program that challenges students to think critically, excel in their studies, and develop as global citizens, leading to a qualification that is recognized by universities around the world. To earn an IB diploma, students must take a challenging liberal arts course of studies and pass examinations in six academic subjects.

The IB Diploma programme is offered at the following schools

- Albert Einstein High School (for students in the Downcounty Consortium)
- Bethesda-Chevy Chase High School (for students in the B-CC area)
- John F. Kennedy High School (Regional)
- Richard Montgomery High School (Countywide)
- Rockville High School
- Seneca Valley High School
- Springbrook High School (Regional)
- Watkins Mill High School (Regional)

The following IB programmes are application-based. The application process takes place in Grade 8.

- Richard Montgomery High School (Countywide)
- John F. Kennedy High School (Regional)
- Springbrook High School (Regional)
- Watkins Mill High School (Regional)

## International Baccalaureate Career-related Programme (IB CP)

The International Baccalaureate® (IB) Career-related Programme (CP) is a framework of international education that incorporates the values of the IB into a unique programme addressing the needs of students engaged in career-related education. The CP is designed to prepare students for higher education, an internship or apprenticeship, or a position in a designated field of interest.

In addition to the IB Diploma Programme, the International Baccalaureate (IB) Career Programme is offered at

- Watkins Mill High School
- Rockville High School
- Seneca Valley High School (IB candidate school)

# International Baccalaureate/Middle Years Programme (MYP)

The MYP is designed for students ages 11 to 16. It provides a framework of learning that encourages students to become creative, critical, and reflective thinkers. The MYP emphasizes intellectual challenge, encouraging students to make connections between their studies in traditional subjects and the real world. It fosters the developmental skills for communication, intercultural understanding, and global engagement—essential qualities for young people who are becoming global leaders. Students engage in research and acquire

critical-thinking skills through all subject areas, as well as study a second language. MYP is authorized and offered as a whole-school program for Grades 9 and 10 at

- Bethesda-Chevy Chase High School,
- Seneca Valley High School (*IB candidate school),
- John F. Kennedy High School(*IB candidate school),
- Richard Montgomery High School,
- Springbrook High School, and
- Watkins Mill High School.

The MCPS IB programme website, *https://www.montgomeryschoolsmd. org/curriculum/specialprograms/high/ib.aspx/*, contains links to each school's program and admission process. Each high school offering an IB programme has individualized its program, providing unique selections from the IB electives and languages. Local school course listings will indicate those courses available at a given school.

## Blair/Poolesville Courses and IB Courses
Courses are listed at the end of each departmental listing in this bulletin and the Interdisciplinary and Research Courses section.

## Other Application Programs
There are other competitive programs offered to MCPS students, with a limited number of seats that require students to complete an application and meet specific admission criteria. Programs include the Communications Art program at Blair HS, Global Ecology and the Humanities programs at Poolesville HS and the Leadership Training Institute at Kennedy HS. Some programs accept applications countywide, while others accept applications from designated regions of the county. For more information about application programs offered in MCPS, visit *www.montgomeryschoolsmd.org/ curriculum/specialprograms/*. Parents/guardians of current Grades 8–11 students are able to access and review all eligible high school application programs on the Synergy ParentVUE. Each application program may have its own application. Private school students may visit the special programs website to apply.

# STUDENT ONLINE LEARNING/ ELEARNING
The MCPS Student eLearning program provides opportunities for students to take selected high school courses outside the traditional classroom setting. The program allows students access to online courses for acceleration, flexibility in scheduling, or to retake previously failed courses. Courses taught by MCPS teachers follow a blended learning model, requiring attendance at scheduled face-to-face meetings, in addition to online instruction. More information about student online learning/elearning is at *www. montgomeryschoolsmd.org/departments/onlinelearning/*.

Students can choose to take coursework for original credit, retake a course or retake a portion of a course (credit recovery). Additional information about procedures for credit recovery can be found here: *https://www.montgomeryschoolsmd.org/departments/policy/pdf/ikara.pdf*.

- **Online MCPS Courses**
  MCPS offers three online courses: Comprehensive Health, Foundations of Technology, and Foundations of Computer Science, which follow a blended model of online and face-to-face (f2f) learning. Each course satisfies both MCPS and Maryland state graduation requirements. Registration and cost information for these classes is available on the Student eLearning website.
- **Online AP Courses**
  Approved AP courses, offered by vendors outside of MCPS are delivered solely online. Courses have an associated fee. Registration information is available on the Student eLearning

website. As with all courses offered by institutions other than MCPS, advance permission from the principal or designee is required for courses for which the student seeks high school credit. Additional information regarding eLearning is at *www. montgomeryschoolsmd.org/departments/onlinelearning/*.

- **Online Pathway to Graduation**
  The Online Pathway to Graduation (OPTG) is a year-long program, split into two sessions, that enables current and former MCPS high school students to meet the academic requirements for a Maryland high school diploma. Students who have completed at least one year of high school are eligible to participate in the program. Instruction in OPTG courses is of a blended nature, and student both access instruction online and from teachers at one of three support centers (Albert Einstein, Gaithersburg, and Northwest high schools) who monitor participant progress and provide instruction. All unit tests are proctored at the assigned support center. Participants progress through their courses, accessing both digital and in-person instruction. As participants successfully complete each course, credit is awarded, thus helping the participant progress toward earning a high school diploma. Also, participants are responsible for completing all Maryland and MCPS graduation requirements, including MCAP and SSL requirements. These courses are free for current MCPS students.

To learn about the Student eLearning program, see your counselor, contact the Student eLearning team, or visit the Student eLearning website, *www.montgomeryschoolsmd.org/departments/onlinelearning/*.

## MC Ensembles Partnership Program
The MC Ensembles Partnership gives talented MCPS high school instrumental music students the opportunity to participate in the MC Wind Ensemble. For additional information, speak with your school's instrumental music teacher or contact Dr. Jay Crowder, Montgomery College Music Department chair, at 240-567-7554, jay.crowder@ montgomerycollege.edu.

# ADDITIONAL LEARNING OPPORTUNITIES
## George B. Thomas, Sr. Learning Academies
Twelve MCPS schools host The George B. Thomas, Sr. Learning Academy, Inc. programs on Saturday mornings (Saturday School), providing enrichment, tutoring, and mentoring for students in Grades K–12. The George B. Thomas, Sr. Learning Academy, Inc. was established in 1986 by the Mu Nu Chapter of Omega Psi Phi Fraternity, as an outgrowth of the Saturday School Initiative of Blacks United for Excellence in Education. Saturday Schools are open to all students, regardless of their home school. High school sites include Blair, Clarksburg, Einstein, Gaithersburg, Magruder, Northwest, Paint Branch, Rockville, Springbrook, Watkins Mill, and Wheaton. There is also a location at Strathmore ES. For more information about Saturday School tutoring and the George B. Thomas, Sr. learning academies, contact your local school or visit *www.montgomeryschoolsmd.org/departments/gbtla/*, Or *www. saturdayschool.org*.

## Summer School Sites and Schedules
A wide range of high school summer course offerings will be available in Summer 2021 through the MCPS Summer School Program. Online courses in all subject areas will be offered for both original and repeat credit. More information will be available in spring 2021 at *https://www.montgomeryschoolsmd.org/departments/extendedhours/ summerschool/*.

# Dual Enrollment: College Options

MCPS and Montgomery College (MC) have partnered to provide college credit options for college ready students via dual-enrollment opportunities. College ready students may take college courses at their high school (if offered), on the college campus, or online. All MCPS students may take college courses at a reduced tuition rate. Students who apply and meet MC qualifications for the MC High School Grant may be able to take college courses at no tuition cost. All college courses taken and successfully completed will receive dual credit by counting toward college and high school credit. The courses will appear on the high school transcript as an advanced-level course, unless requested that it not be placed on the transcript during the enrollment process. There are special dual-enrollment programs that allow students the opportunity to earn an associate's degree from MC as well as a Maryland state diploma. More information about all dual enrollment programs is found below and at the following link: *https://www.montgomeryschoolsmd.org/curriculum/partnerships/dual-enrollment.aspx*.

## Early College

The Early College (EC) dual-enrollment program is offered at each MC campus, and provides qualified students with the opportunity to earn an associate's degree in a specific content area. Students apply to the EC program in the fall of 10th grade. Participating students will complete their 11th and 12th grade years of high school while simultaneously completing their first two years of college. The degree programs offered in the 2021-2022 school year are listed below by MC campus.

| EARLY COLLEGE PROGRAMS | |
| --- | --- |
| *Offered only at:* **Thomas Edison HS of Technology** | |
| Montgomery College, Germantown Campus | A.A. Business<br>A.S. Biological Science<br>A.A.S. Biotechnology<br>A.A. Computer Science<br>A.A.S. Cybersecurity |
| Montgomery College, Rockville Campus | A.A. Business<br>A.S. General Engineering<br>A.S. Mathematics<br>A.A.T. Elementary Education/Special Education |
| Montgomery College, Takoma Park Campus | A.A.S. Diagnostic Medical Sonography<br>A.A.S. Physical Therapy Assistant<br>A.A.S. Radiologic Technology<br>A.A.S. Surgical Technology<br>A.S. Biological Science<br>A.S. Nursing |

For more information about the Early College program, please visit *https://www.montgomeryschoolsmd.org/curriculum/partnerships/early-college.aspx*.

## Middle College

In collaboration with MC, MCPS offers a Middle College program at three high schools. The Montgomery College Middle College (MC2) program at Northwest and Northwood high schools and the P-TECH Middle College program is offered at Clarksburg High School. Each Middle College dual enrollment program prepares students to earn a Maryland state high school diploma and college credits toward an associate's degree. The college credits are earned through a combination of courses, including Advanced Placement courses and corresponding test scores, CLEP examinations, and/or MC courses. Students are supported through a progressive transition from a traditional high school experience, to a college-like experience on the high school campus, and finally to full college coursework and experience on the college campus. During this transition, students are provided with dedicated college preparation, including preparation for the college placement and admission assessments. Students will matriculate through a pathway toward the associate's degree, beginning in Grade 9.

| MIDDLE COLLEGE PROGRAMS | |
| --- | --- |
| Montgomery College Middle College (MC2) @ Northwest | Northwest High School |
| Montgomery College Middle College (MC2) @ Northwood | Northwood High School |
| Pathways In Network and Information Technology Program (P-TECH) | Clarksburg High School |

For more information about Middle College programs, please visit *https://www.montgomeryschoolsmd.org/curriculum/partnerships/middle-college.aspx*.

## Jump Start to College Pathway

The Jump Start to College Pathway is an opportunity for high school students to earn college credits using dual enrollment opportunities available through our partnership with Montgomery College (MC) to meet high school graduation requirements and begin their journey toward success in college and beyond.

Students taking advantage of the Jump Start Pathway can take prescribed English, mathematics, science, social studies, and all other courses required for a Maryland high school diploma.

- All college courses are used to earn dual credit; dual credit allows students to receive high school and college credit for each college course successfully completed.
- College course grades that appear on the high school transcript will count for advanced level credit when calculated into the weighted GPA, just like Advanced Placement (AP) and honors courses.
- All college courses are offered at a reduced tuition cost.
- Students who take select AP and International Baccalaureate courses and score high enough on the respective course examination, may be able to earn college credit for specific college courses.
- Each student's enrollment in any MC course is dependent on the student meeting all requirements, prerequisites, and assessment levels for the course as determined by MC.

For more information about Jump Start, please visit *https://www.montgomeryschoolsmd.org/curriculum/partnerships/jump-start.aspx*.

# Computer Science, Engineering, and Technology Education

To prepare all students for demands of college, careers, and the rapidly changing 21st century workforce, MCPS provides a variety of engaging, hands-on offerings in computer science, engineering, and technology. In these courses, students apply mathematics, science, and technical knowledge while using computational and design thinking to innovate and solve relevant problems. The interdisciplinary nature of these technical subjects and a problem-based learning approach fosters creativity and critical thinking along with the communication and collaboration skills needed to thrive in the 21st century. MCPS utilizes external curriculum from national organizations such as Code.org, Project Lead the Way (PLTW), and International Technology and Engineering Educators Association (ITEEA) to include experiences in coding, robotics, and engineering design processes.

Many MCPS computer science, engineering, and technology education courses, such as Foundations of Computer Science and Foundations of Engineering and Technology are designed to be accessible to students with no previous experience. For students who have taken technology-related courses in middle school or participated in related extracurricular experiences, consider beginning with AP Computer Science or a rigorous career readiness program such as an Information Technology program, Computer Science/Code.org or Project Lead the Way Engineering.

☞ **One credit in Technology Education is required for graduation.** Courses that satisfy that requirement are listed below.

| |
|---|
| Foundations of Technology A/B |
| Foundations of Computer Science A/B |
| Foundations of Engineering & Technology A/B |
| Introduction to Engineering Design A/B |
| AP Computer Science Principles, TE A/B |
| IB Computer Science 1, TE A/B |

## COMPUTER SCIENCE COURSES
Visit *http://coursebulletin.montgomeryschoolsmd.org/CourseLists/Index/163* for course descriptions.

| COURSE TITLE | COURSE CODE | COURSE INFO | CREDIT | PREREQUISITES |
|---|---|---|---|---|
| **Foundations of Computer Science A/B** | TEC2002 A/B | TE | 0.5 | |
| **AP Computer Science Principles A/B TE** | TEC2005 A/B | CM AP (AL) TE | 0.5 | **Corequisite:** *Algebra I* |
| **Computer Programming I** | ITC2024 A/B | CM (AL) | 0.5 | *AP Computer Science Java A/B*<br>**Corequisite:** *Geometry or Honors Geometry* |
| **AP Computer Science Java A/B** | ITC2007 A/B | CM AP (AL) | 0.5 | *Computer Programming 1 A/B or AP Computer Science Principles A/B* |
| **Computer Programming 3—Advanced Topics in Computer Science A/B** | ITC2021 A/B | CM (AL) | 0.5 | |
| **Website Development A/B** | ITC2025 A/B | CM | 0.5 | |
| **Web Tools and Digital Media, Advanced A/B** | ITC2012 A/B | CM (AL) | 0.5 | |
| **Cybersecurity Capstone A/B** | ITC2006 A/B) or ITC2060 A/B | CM (AL) | 1.5 or 1.0 | *AP Computer Science Java A/B or Network Operations 2 or Advanced Web Tools and Digital Media A/B* |
| TECHNOLOGY EDUCATION & ENGINEERING COURSES | | | | |
| **Foundations of Technology A/B** | TEC2000 A/B | TE | 0.5 | |
| **Foundations of Engineering and Technology** | TEC2016 A/B | TE CM (AL) | 0.5 | |
| **Introduction to Engineering Design A/B** | TEC2017 A/B | TE CM (AL) | 0.5 | |
| **Advanced Design Applications A/B** | TEC2007 A/B | CM (AL) | 0.5 | *Completion of Basic Tech Ed credit* |
| **Advanced Technological Applications A/B** | TEC2008 A/B | CM (AL) | 0.5 | |

## INTERNATIONAL BACCALAUREATE
## COMPUTER SCIENCE AND TECHNOLOGY COURSES

*Offered only at:* **Bethesda-Chevy Chase HS, Albert Einstein HS, John F. Kennedy HS, Richard Montgomery HS, Rockville HS, Seneca Valley HS, Springbrook HS, Watkins Mill HS**

| COURSE TITLE | COURSE CODE | COURSE CODE | CREDIT | PREREQUISITES |
|---|---|---|---|---|
| **IB Computer Science 1 A/B** | ITC 2064 A/B | TE IB (AL) | 0.5 | |
| **IB Computer Science 2 A/B** | ITC 2005 A/B | CM IB (AL) | 0.5 | *IB Computer Science 1A/B* |
| **IB Information Technology in a Global Society A/B** | ITC 2000 A/B | CM IB (AL) | 0.5 | |

**Additional computer science and engineering courses** may be found as part of the following Career Readiness Programs of Study and Countywide Application Programs:

- Computer Science/Code.org
- Engineering, Project Lead the Way
- IT Networking Academy (CISCO)
- Academy of Information Technology (NAF)—Web Design
- Network Operations at Clarksburg High School, Seneca Valley High School and Thomas Edison High School.
- P-TECH—Pathways in Networking and Information Technology at Clarksburg High School
- Math, Science, and Computer Science Program at Montgomery Blair and Poolesville high schools

# English Language Arts and Reading

👉 **Four credits in English are required for graduation:** English 9, English 10, English 11, and English 12. Courses that satisfy these requirements are described below. The goal of the English Language Arts program is to help students develop into literate, thoughtful communicators, capable of controlling language effectively as they negotiate an increasingly complex, information-rich world.

Aligned with the ELA Common Core State Standards, all English courses give students opportunities to refine specific skills and strategies in reading, writing, speaking, listening, and viewing to prepare them for the literacy demands of college and careers. Studying a variety of texts that are diverse in terms of cultural perspectives, time periods, and ideas about the human experience, students use evidence and reasoning to write increasingly complex arguments, analyses, and narratives. As they develop more nuanced perspectives, students appreciate literature and media as catalysts for inquiry and reflection, readying them to participate in a civil and democratic society.

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|
| English 9 A/B | ENG2000 A/B | 0.5 | NCAA | |
| English 9, Honors A/B | ENG2001 A/B | 0.5 | CM NCAA (H) | |
| English 10 A/B | ENG2002 A/B | 0.5 | NCAA | *English 9* |
| English 10, Honors A/B | ENG2003 A/B | 0.5 | CM NCAA (H) | *English 9* |
| English 11 A/B | ENG2004 A/B | 0.5 | NCAA | *English 10* |
| English 11, Honors A/B | ENG2005 A/B | 0.5 | CM NCAA (H) | *English 10* |
| English 12 A/B | ENG2006 A/B | 0.5 | NCAA | *English 11* |
| English 12, Honors A/B | ENG2007 A/B | 0.5 | CM NCAA (H) | *English 11* |
| English Language and Composition, AP, A/B | ENG2031 A/B | 0.5 | CM NCAA AP | *English 10* |
| English Literature and Composition, AP, A/B | ENG2032 A/B | 0.5 | CM NCAA AP | *English 11* |
| African American Literature | ENG2039 | 0.5 | | |
| Creative Writing A/B | ENG2048 A/B | 0.5 | CM | *English 9* |
| Culture in Literature | ENG2033 | 0.5 | | |
| Graphic Novel Literature | ENG2040 | 0.5 | | |
| Myth and Modern Culture A/B | ENG2044 A/B | 0.5 | | |
| Informative and Argumentative Speaking | ENG2069 | 0.5 | CM | *English 10* |
| Journalism A: Editing, Gathering, and Reporting the News | ENG2053A | 0.5 | | |
| Journalism B: Advanced News Writing and Paper Production | ENG2053B | 0.5 | | *Journalism A* |
| Techniques of Advanced Journalism | ENG2054 | 0.5 | CM (AL) | *Journalism A and B* |
| Publications Editing, Layout, and Business Management | ENG2055 | 0.5 | CM (AL) | *Journalism A* |
| Literature as Film | ENG2073 | 0.5 | | |
| Media in Society | ENG2072 | 0.5 | CM | |
| Oral Interpretation and Media Study | ENG2070 | 0.5 | CM | *English 10* |
| Television Production 1/2 | AMC2014 AMC2015 | 0.5 | | |
| College Test Prep | NSS2000 | 0.5 | | |
| Developmental Reading | ENG2052 | 0.5 | | |
| Academic Reading A/B | ENG2051 A/B | 0.5 | | |
| Academic Reading DP A/B | ENG2019 A/B | 1.0 | (DP) | |
| Basic Reading | ENG2016 | 0.5 | | |

**LANGUAGE ARTS AND READING**
Visit *http://coursebulletin.montgomeryschoolsmd.org/CourseLists/Index/68* for course descriptions.

## LANGUAGE ARTS AND READING

Visit *http://coursebulletin.montgomeryschoolsmd.org/CourseLists/Index/68* for course descriptions.

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER |
|---|---|---|
| College Prep Literacy | ENG2065 | 0.5 |
| College Prep Literacy II | ENG2066 | 0.5 |
| College Prep Literacy III | ENG2067 | 0.5 |
| College Prep Literacy IV | ENG2068 | 0.5 |
| Lights, Camera, Literacy! High School Edition | ENG2041 | 0.5 |

## INTERNATIONAL BACCALAUREATE (IB) ENGLISH COURSES

*Offered only at:* **Bethesda-Chevy Chase HS, Albert Einstein HS, John F. Kennedy HS, Richard Montgomery HS, Rockville HS, Seneca Valley HS, Springbrook HS, Watkins Mill HS**

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER |
|---|---|---|
| IB English Literature 1 A/B | ENG2036 A/B | 0.5 |
| IB English Literature 2 A/B | ENG2037 A/B | 0.5 |
| IB English Language and Literature 1 A/B | ENG2045 A/B | 0.5 |
| IB English Language and Literature 2 A/B | ENG2046 A/B | 0.5 |
| IB Extended Essay | ENG2038 | 0.5 |
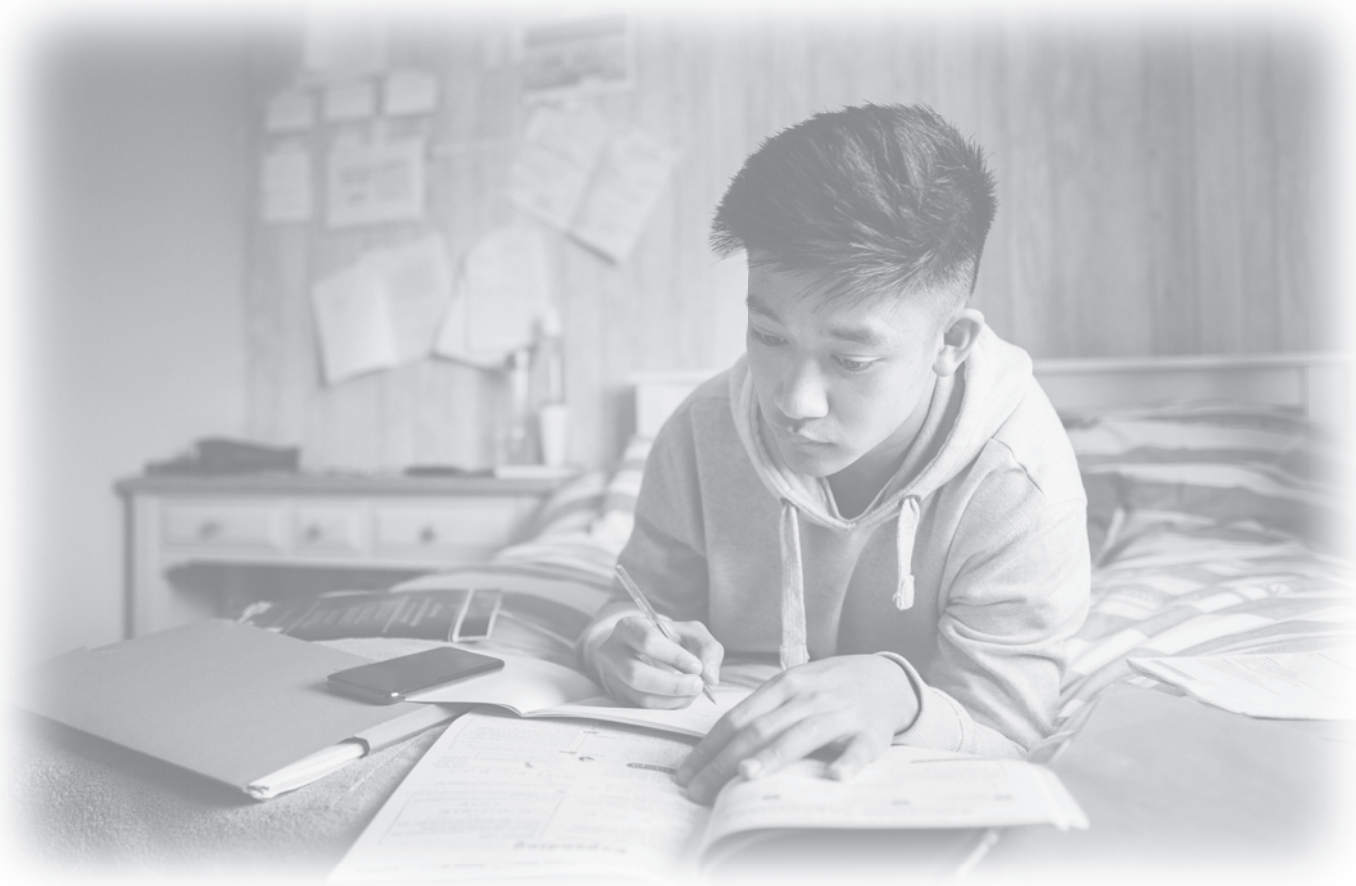
# English for Speakers of Other Languages (ESOL)

The English for Speakers of Other Languages (ESOL) program provides high-quality English language development instruction aligned to grade-level content standards in English Language Arts. These courses focus on helping students develop the academic language proficiency needed to be able to learn content knowledge, skills, and processes and effectively use language to communicate proficiently in mainstream courses.

These courses are designed for the rapid mastery of the English language, focusing on reading, writing, speaking, and listening skills. ESOL courses usually begin with extensive listening and speaking practice, building on auditory and oral skills, and support the development of reading and writing. These courses provide an explanation of grammatical structures of the English language, enabling students to progress from a basic understanding of English words and verb tenses to a more comprehensive grasp of various formal and informal styles to prepare them for grade-level mainstream English courses. ESOL classes may also include an orientation to the customs and culture of the diverse population in the United States. ESOL students can only receive up to two English credits from ELD courses for up to four semesters (e.g., English for Beginning ELs, English for Intermediate ELs, and English for Advanced ELs).

These courses provide opportunities for students to develop their competency in understanding spoken English, using vocabulary and language structures correctly in context, and engaging in extensive academic discourse. They receive instruction from grade-level curriculum resources and complex texts that represent various genres of narration, poetry, drama, and exposition and are taught to analyze text from cultural and historical perspectives. Valuing and promoting the home language and culture of ESOL students fosters the understanding that literacy skills can be transferred across languages. It is critical that all educators in each school collaborate to support the academic success of ESOL students.

ESOL students will be scheduled into English classes designed to meet their level of academic language proficiency in appropriate ways including sheltered, co-taught, single and double periods. ESOL levels will be aligned to the English Language Proficiency (ELP) levels 1.0-4.4 on the WIDA ACCESS test.

Visit: *http://coursebulletin.montgomeryschoolsmd.org/CourseLists/Index/69* for course descriptions

| NEW LEVELS | ELP 1 | | | | | | | | | | ELP 2 | | | | | | | | | | ELP 3 | | | | | | | | | | ELP 4 | | | | | N/A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WIDA ACCESS | 1.0 | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2.0 | 2.1 | 2.2 | 2.3 | 2.4 | 20.5 | 2.6 | 2.7 | 2.8 | 2.9 | 3.0 | 3.1 | 3.2 | 3.3 | 3.4 | 30.5 | 3.6 | 3.7 | 3.8 | 3.9 | 4.0 | 4.1 | 4.2 | 4.3 | 4.4 | 40.5 | 6.0 |
| PREVIOUS LEVELS | 1 | | | | | | | | | | 2 | | | | | | | | | | 3 | | | | | | | | | | 4 | | | | 5 | EXIT | |

| ENGLISH FOR SPEAKERS OF OTHER LANGUAGES (ESOL) | | | |
|---|---|---|---|
| **COURSE TITLE** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **PREREQUISITES/ COREQUISITES** |
| **ELP Level 1 (sheltered English/ELD-double period):** | | | |
| English 9 for ELs I | ESL2060 A/B | 0.5 | **Corequisite:** *English Language Development Seminar ELs I ESL 2069 A/B* |
| English 10 for ELs I | ESL2061 A/B | 0.5 | **Corequisite:** *English Language Development Seminar ELs I ESL 2069 A/B* |
| **ELP Level 2 (sheltered English/ELD-double period):** | | | |
| English 9 for ELs II | ESL2063 A/B | 0.5 | **Corequisite:** *English Language Development Seminar ELs II ESL 2070 A/B* |
| English 10 for ELs II | ESL2064 A/B | 0.5 | **Corequisite:** *English Language Development Seminar ELs II ESL 2070 A/B* |
| **ELP Level 3 (sheltered English/ELD-double period):** | | | |
| English 9 for ELs III | ESL2066 A/B | 0.5 | **Optional:** *English Language Development Seminar for English Learners III ESL 2071 A/B* |
| English 10 for ELs III | ESL2067 A/B | 0.5 | **Optional:** *English Language Development Seminar for English Learners III ESL 2071 A/B* |
| *For WIDA Level 4 students can receive ELD instruction in a co-taught model or from a dually certified teacher in a mainstream English class. ESOL students who are enrolled in Grade 11 and 12 must be enrolled in grade level English courses and can receive ELD instruction in one of the following ways; ELD instruction in an ELD seminar, ELD instruction from an ESOL co-teacher in an English course or ELD instruction with an ESOL teacher who is also teaching the English course* | | | |

# Fine Arts

The purpose of the fine arts curriculum is to open the minds of students to new and diverse worlds and cultures and enable them to creatively express themselves and value the multiple perspectives of others. Students are actively involved learners in the arts. Through their experiences in the arts, they become creative and critical problem solvers, independent and divergent thinkers, self-motivated workers, and innovators.

Students are led in an exploration of self, others, and the world in relation to the art forms. Students are given opportunities in the fine arts to apply learning in new ways by connecting and integrating content across disciplines. The fine arts—dance, media arts, music, theatre, and visual arts—provide each generation with knowledge of other cultures, past and present, and are among humanity's greatest aesthetic and intellectual achievements. The curricula in fine arts courses are guided by four artistic processes identified in the new MCPS Frameworks: Creating, Performing/ Presenting, Responding, and Connecting; and are aligned to both the National Fine Arts and Maryland State Fine Arts standards.

The fine arts encourage students to take intellectual risks and to think critically and creatively when presented with opportunities to make choices and to solve complex, open-ended problems with the possibility of multiple solutions. Excellence in the fine arts is developed through continuous practice, craftsmanship, refinement, and reflection. The creative process encourages students to build resilience, perseverance, self-awareness, and a growth mindset. The fine arts prepare students to engage meaningfully with others in an ever-changing world. The skills learned through study and practice of the fine arts ensure students are equipped for future studies and careers.

🎓 **One credit in Fine Arts is required for graduation:** Courses that satisfy the fine arts requirement are marked FA.

| DANCE Visit *http://coursebulletin.montgomeryschoolsmd.org/CourseLists/Index/5* for course descriptions | | | | |
|---|---|---|---|---|
| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
| Dance as Fine Art A/B | ART2000 A/B | 0.5 | FA | *Dance as Fine Art A/B* |
| Adv Dance 2 A/B | ART2003 A/B | 0.5 | FA CM (AL) | *Adv Dance 2 A/B* |
| Adv Dance 3 A/B | ART2004 A/B | 0.5 | FA CM (AL) | *Adv Dance 3 A/B* |
| Dance Company A/B | ART2010 A/B | 0.5 | FA CM (AL) | *Dance Company A/B* |
| Ballet 1 A/B | ART2014 A/B | 0.5 | FA CM (AL) | *Ballet 1 A/B* |
| Ballet 2 A/B | ART2015 A/B | 0.5 | FA | *Ballet 2 A/B* |
| Choreography 1 A/B | ART2016 A/B | 0.5 | FA CM (AL) | *Choreography 1 A/B* |
| Hip Hop Dance A/B | ART2009 A/B | 0.5 | FA | *Hip Hop Dance A/B* |
| Jazz Dance 1 A/B | ART2011 A/B | 0.5 | FA | *Jazz Dance 1 A/B* |
| Jazz Dance 2 A/B | ART2012 A/B | 0.5 | FA CM (AL) | *Jazz Dance 2 A/B* |
| Jazz Dance 3 A/B | ART2013 A/B | 0.5 | FA CM (AL) | *Jazz Dance 3 A/B* |
| Modern Dance A/B | ART2005 A/B | 0.5 | FA CM (AL) | *Modern Dance A/B* |
| Tap Dance 1 A/B | ART2006 A/B | 0.5 | FA CM (AL) | *Tap Dance 1 A/B* |
| Tap Dance 2 A/B | ART2007 A/B | 0.5 | FA | *Tap Dance 2 A/B* |
| Tap Dance 3 A/B | ART2008 A/B | 0.5 | FA CM (AL) | *Tap Dance 3 A/B* |

| MEDIA ARTS | | | | |
|---|---|---|---|---|
| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
| Production & Performance A/B | ART2108 A/B | 0.5 | FA | |

| GENERAL MUSIC | | | | |
|---|---|---|---|---|
| **COURSE TITLE** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **Piano, HS 1 A/B** | ART2071 A/B | 0.5 | FA | |
| **Piano, HS 2 A/B** | ART2072 A/B | 0.5 | FA (AL) | *Piano, HS 1 A/B or permission of the instructor based on an audition* |
| **Piano, HS 3 A/B** | ART2073 A/B | 0.5 | FA (AL) | *Piano, HS 2 A/B or permission of the instructor based on an audition* |
| **Piano, HS 4 A/B** | ART2074 A/B | 0.5 | FA (AL) | *Piano, HS 3 A/B or permission of the instructor based on an audition* |
| **Music Theory and Composition A/B** | ART2075 A/B | 0.5 | FA | |
| **Music Theory and Composition, AP** | ART2076 A/B | 0.5 | CM FA AP | *Permission of the instructor based on previous musical experience.* |
| **Music Theory and Composition 2 A/B** | ART2077 A/B | 0.5 | CM FA (AL) | *Music Theory and Composition 1 A/B* |
| **Music Perspectives A/B** | ART2078 A/B | 0.5 | FA | |
| **Guitar 1, HS A/B** | ART2082 A/B | 0.5 | FA | |
| **Guitar 2, HS A/B** | ART2083 A/B | 0.5 | FA (AL) | *Guitar, HS 1 A/B or permission of the instructor based on an audition* |
| **Guitar 3, HS A/B** | ART2080 A/B | 0.5 | FA (AL) | *Guitar, HS 2 A/B or permission of the instructor based on an audition* |
| **Guitar 4, HS A/B** | ART2081 A/B | 0.5 | FA (AL) | *Guitar, HS 3 A/B or permission of the instructor based on an audition* |
| **Music Technology A/B** | ART2084 A/B | 0.5 | FA | |

| CHORAL MUSIC | | | | |
|---|---|---|---|---|
| **COURSE TITLE** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **Chorus, HS 1 A/B** | ART2087 A/B | 0.5 | FA | |
| **Chorus, HS 2 A/B** | ART2088 A/B | 0.5 | FA CM (AL) | *Chorus, HS 1 A/B or permission of the instructor based on an audition, experience in previous ensembles and the need for a balanced ensemble.* |
| **Chorus, HS 3 A/B** | ART2089 A/B | 0.5 | FA CM (AL) | *Chorus, HS 2 A/B or permission of the instructor based on an audition, experience in previous ensembles and the need for a balanced ensemble.* |
| **Choir, Chamber A/B** | ART2090 A/B | 0.5 | FA CM (AL) | *Permission of the instructor based on an audition, experience in previous ensembles and the need for a balanced ensemble.* |
| **Choir, Show A/B** | ART2091 A/B | 0.5 | FA (AL) | *Permission of the instructor based on an audition, experience in previous ensembles and the need for a balanced ensemble.* |

## INSTRUMENTAL MUSIC

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|
| Band, Beginning A/B | ART2092 A/B | 0.5 | FA | |
| Band, Advanced A/B | ART2095 A/B | 0.5 | FA | *MS Band 3, Beginning Band A/B, based on an audition, experience in previous ensembles and instrumentation needs.* |
| Band, Concert A/B | ART2093 A/B | 0.5 | FA | *MS Band 3, Advanced Band A/B, based on an audition, experience in previous ensembles and instrumentation needs.* |
| Band, Symphonic A/B | ART2094 A/B | 0.5 | FA CM (AL) | *Concert Band A/B, based on an audition, experience in previous ensembles and instrumentation needs.* |
| Orchestra, Beginning A/B | ART2096 A/B | 0.5 | FA | |
| Orchestra, Advanced A/B | ART2098 A/B | 0.5 | FA | *MS Orchestra 3, Beginning Orchestra A/B, based on an audition, experience in previous ensembles and instrumentation needs.* |
| Orchestra, Concert A/B | ART2097 A/B | 0.5 | FA | *MS Orchestra 3, Advanced Orchestra A/B, based on an audition, experience in previous ensembles and instrumentation needs.* |
| Orchestra, Symphonic A/B | ART2099 A/B | 0.5 | FA CM (AL) | *Concert Orchestra A/B, based on an audition, experience in previous ensembles and instrumentation needs.* |
| Jazz Ensemble A/B | ART2100 A/B | 0.5 | FA CM (AL) | *Based on an audition, experience in previous ensembles and the need for a balanced ensemble.* |

## THEATRE

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|
| Theatre 1 A/B | ART2106 A/B | 0.5 | FA | |
| Theatre 2 A/B | ART2107 A/B | 0.5 | FA CM (AL) | *Theatre 1 A/B, or permission of the instructor* |
| Stage Design | ART2104 | 0.5 | FA CM (AL) | *Theatre 1 A/B, or permission of the instructor* |
| Musical Theatre A/B | ART2101 A/B | 0.5 | FA | *Theatre 1 A/B, or permission of the instructor* |
| Advanced Acting | ART2103 | 0.5 | FA CM (AL) | *Theatre 2 A/B, Stage Design, Musical Theatre A/B, or permission of the instructor* |
| Play Directing | ART2105 | 0.5 | FA CM (AL) | *Theatre 2 A/B, Stage Design, Musical Theatre A/B, or permission of the instructor* |

| VISUAL ARTS | | | | |
|---|---|---|---|---|
| **COURSE TITLE** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **Art History A/B** | ART2052 A/B | 0.5 | FA | |
| **Foundations of Art & Culture A/B** | ART2001 A/B | 1.0 | FA | |
| **Advanced Contemporary & Mixed Media 2** | ART2020 | 0.5 | FA CM (AL) | *1.0 credit in Visual Art* |
| **Advanced Animation 2 A/B** | ART2061 A/B | 0.5 | FA CM (AL) | *1.0 credit in Studio or Digital Art* |
| **2–D STUDIO ART** | | | | |
| **2-D Studio Art 1 A/B** | ART2042 A/B | 0.5 | FA | |
| **2-D Studio Art 2 A/B** | ART2031 A/B | 0.5 | FA CM (AL) | *2-D Studio Art 1 A/B* |
| **Advanced Drawing 2** | ART2019 A/B | 0.5 | FA CM (AL) | *2-D Studio Art 1 A/B* |
| **Advanced Painting 2 A/B** | ART2043 A/B | 0.5 | FA CM (AL) | *2-D Studio Art 1 A/B* |
| **Advanced Printmaking 2 A/B** | ART2044 A/B | 0.5 | FA CM (AL) | *2-D Studio Art 1 A/B* |
| **Advanced 2-D Studio Art 3 A/B** | ART2032 A/B | 0.5 | FA CM (AL) | *2.0 credits in 2-D Studio Art Pathway* |
| **Advanced 2-D Studio Art 4 A/B** | ART2033 A/B | 0.5 | FA CM (AL) | *Advanced 2-D Studio Art 3 A/B* |
| **CERAMICS & SCULPTURE** | | | | |
| **Ceramics/Sculpture 1 A/B** | ART2045 A/B | 0.5 | FA | |
| **Advanced Ceramics/Sculpture 2 A/B** | ART2046 A/B | 0.5 | FA CM (AL) | *Ceramics/Sculpture 1 A/B* |
| **Advanced Ceramics/Sculpture 3 A/B** | ART2047 A/B | 0.5 | FA CM (AL) | *Advanced Ceramics/Sculpture 2 A/B* |
| **Advanced Ceramics/Sculpture 4A/B** | ART2048 A/B | 0.5 | FA CM (AL) | *Advanced Ceramics/Sculpture 3 A/B* |
| **DIGITAL ART** | | | | |
| **Digital Art 1 A/B** | ART2069 A/B | 0.5 | FA | |
| **Advanced Digital Art 2 A/B** | ART2070 A/B | 0.5 | FA CM (AL) | *Digital Art 1 A/B* |
| **Advanced Digital Art 3 A/B** | ART2059 A/B | 0.5 | FA CM (AL) | *Digital Art 2 A/B or Animation A/B* |
| **Advanced Digital Art 4A/B** | ART2060 A/B | 0.5 | FA CM (AL) | *Advanced Digital Art 3 A/B* |
| **FUNCTIONAL FINE ART & CRAFT** | | | | |
| **Functional Fine Art & Craft 1 A/B** | ART2053 A/B | 0.5 | FA | |
| **Advanced Functional Fine Art and Craft 2 A/B** | ART2049 A/B | 0.5 | FA CM (AL) | *Functional Fine Art & Craft 1 A/B* |
| **Graphic Art & Design 1 A/B** | ART2050 A/B | 0.5 | FA | |
| **Advanced Graphic Art & Design 2 A/B** | ART2051 A/B | 0.5 | FA CM (AL) | *Graphic Art & Design 1 A/B* |
| **Fashion Illustration 1 A/B** | ART2022 A/B | 0.5 | FA | |
| **Advanced Fashion Illustration 2 A/B** | ART2030 A/B | 0.5 | FA CM (AL) | *Fashion Illustration 1 A/B* |
| **Fashion Production 1 A/B** | ART2023 A/B | 0.5 | FA | |
| **Advanced Fashion Production 2 A/B** | ART2024 A/B | 0.5 | FA CM (AL) | *Fashion Production 1 A/B* |
| **PHOTOGRAPHY** | | | | |
| **Darkroom Photography A/B** | ART2037 A/B | 0.5 | FA | |
| **Photography 1 A/B** | ART2038 A/B | 0.5 | FA | |
| **Advanced Photography 2 A/B** | ART2039 A/B | 0.5 | FA CM (AL) | *Photography 1 A/B or Darkroom Photography A/B* |
| **Advanced Photography 3 A/B** | ART2034 A/B | 0.5 | FA CM (AL) | *Advanced Photography 2 A/B* |
| **Advanced Photography 4 A/B** | ART2035 A/B | 0.5 | FA CM (AL) | *Advanced Photography 3 A/B* |

## VISUAL ARTS

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|
| **ADVANCED PLACEMENT** | | | | |
| **AP Drawing A/B** | ART2062 A/B | 0.5 | FA CM AP | *3.0 credits in Studio Art or Digital Art* |
| **AP Drawing A/B DP** | ART2063 A/B | 0.5 | FA CM AP (DP) | *3.0 credits in Studio Art or Digital Art* |
| **AP Art History A/B** | ART2054 A/B | 0.5 | FA CM AP | |
| **AP 2D Art & Design A/B** | ART2064 A/B | 0.5 | FA CM AP | *2.0 credits in Studio Art or Digital Art* |
| **AP 2D Art & Design DP** | ART2065 | 1.0 | FA CM AP (DP) | *2.0 credits in Studio Art or Digital Art* |
| **AP 3D Art & Design A/B** | ART2066 A/B | 0.5 | FA CM AP | *2.0 credits in Ceramics/Sculpture or Functional Fine Art & Craft* |
| **AP 3D Art & Design DP** | ART2067 | 1.0 | FA CM AP (DP) | *2.0 credits in Ceramics/Sculpture or Functional Fine Art & Craft* |
| **AP Photography A/B** | ART2040 A/B | 0.5 | FA CM AP | *Advanced Photography 2 A/B* |
| **AP Photography A/B DP** | ART2041 A/B | 1.0 | FA CM AP (DP) | *Advanced Photography 2 A/B* |
| **VISUAL ART CENTER (VAC)** | | | | |
| **Visual Art Center 1 A/B** | ART2068 A/B | 0.5 | FA CM (AL) (DP) | |
| **Visual Arts Center 2 A/B** | ART2055 A/B | 0.5 | FA CM (AL) (DP) | |
| **AP Visual Art Center 3 A/B DP** | ART2056 A/B | 1.0 | FA CM (AL) (DP) | |
| **AP Visual Art Center 4 A/B DP** | ART2057 A/B | 1.0 | FA CM (AL) (DP) | |
| **AP Visual Art Center 4 A/B TP** | ART2058 A/B | 1.5 | FA CM (AL) (TP) | |

## INTERNATIONAL BACCALAUREATE (IB) FINE ARTS COURSES
*Offered only at:* **Bethesda-Chevy Chase HS, Albert Einstein HS, John F. Kennedy HS, Richard Montgomery HS, Rockville HS, Seneca Valley HS, Springbrook HS, Watkins Mill HS**

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|
| **IB Advanced Music A/B** | ART2079 A/B | 0.5 | FA CM IB (AL) | *Permission of the instructor based on previous musical experience.* |
| **IB Dance 1 A/B** | ART2124 A/B | 0.5 | FA CM IB (AL) | *Dance as a Fine Art* |
| **IB Dance 2 A/B** | ART2125 A/B | 0.5 | FA CM IB (AL) | *IB Dance 1 A/B* |
| **IB Film Studies 1 A/B** | ART2110 | 0.5 | FA CM IB (AL) | |
| **IB Film Studies 2 A/B** | ART2111 | 0.5 | FA CM IB (AL) | *IB Film Studies 1 A/B* |
| **IB Theatre 1 A/B** | ART2106 A/B | 0.5 | FA CM IB (AL) | *Theatre 2, Stage Design, Musical Theatre, or permission of the instructor* |
| **IB Theatre 2 A/B** | ART2107 A/B | 0.5 | FA CM IB (AL) | *IB Theatre 1 A/B* |
| **IB Art Design 1 A/B** | ART2018 A/B | 0.5 | FA CM IB (AL) | *1.0 credit in Visual Arts* |
| **IB Art Design 2 A/B** | ART2021 A/B | 0.5 | FA CM IB (AL) | *IB Visual Arts 1 A/B* |

**Additional Fine Arts** may be found as part local, countywide, or regional programs:

- The Visual Art Center (VAC) at Albert Einstein High School *www.montgomeryschoolsmd.org/schools/vac/*.
- Montgomery College Ensembles Partnership Program

# Health Education/Physical Education

## Health Education

☞ **One-half credit in Comprehensive Health Education (HPE2031 or HPE2033).**

**Health education** provides students with the knowledge and skills necessary to help them make healthful decisions—both now and in the future. Through the implementation of an effective, comprehensive health education instructional program, students will develop the life skills to enhance their potential for academic success and healthier, happier, and more productive lives. Knowledge of accurate health information is essential. Practicing health-related skills in real-life situations and developing healthful behaviors are the ultimate goals of the program. Health Education aligns with Be Well 365 by emphasizing lifelong positive health-related attitudes and behaviors that promote self-reliance and self-regulation for all students.

| HEALTH EDUCATION COURSES | | | | |
|---|---|---|---|---|
| Visit *http://coursebulletin.montgomeryschoolsmd.org/CourseLists/Index/225* for course descriptions. | | | | |
| **COURSE TITLE** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **Comprehensive Health Education** | HPE2031 | 0.5 | | |
| **Comprehensive Health Education—Honors** | HPE2033 | 0.5 | (H) | |
| **Family Life and Human Development** | HPE2029 | 0.5 | | *Comprehensive Health Education* |
| **Human Behavior** | HPE2030 | 0.5 | NCAA | *Comprehensive Health Education* |
| **First Aid** | HPE2034 | 0.5 | | *Comprehensive Health Education* |

## Physical Education

☞ **One credit in Physical Education is required for graduation:** Courses that satisfy these requirements are described below.

The purpose of the physical education curriculum is to open the minds of students to new worlds and cultures through movement and sport. Students are actively involved learners through their experience in physical education. Students are led in an exploration of self and others in the world of physical education through three specific curricular foundations—movement skills, health-related fitness, and personal and social responsibility—to ensure that graduates from MCPS are physical and health literate citizens. Students receive instruction in fitness and skill performance through movement-based tasks and the implementation of personalized fitness and physical activity plans. Students demonstrate and model responsible personal and social behavior to promote a sense of community and a safe, healthy environment for all. Students acquire the knowledge and skills necessary to transfer their learning outside of the school setting in order to maintain a healthy, active lifestyle. Physical Education aligns with Be Well 365 by emphasizing problem-solving, decision-making, goal-setting, and relationship-building skills.

| PHYSICAL EDUCATION COURSES | | |
|---|---|---|
| Visit *http://coursebulletin.montgomeryschoolsmd.org/CourseLists/Index/225* for course descriptions. | | |
| **COURSE TITLE** | **COURSE CODE** | **PREREQUISITES** |
| **Foundations of Personal Fitness and Sport** | HPE2004 A/B | |
| **Leadership Opportunities in Physical Education** | HPE 2003 | *Foundations of Personal Fitness and Sport* |

## Concentrated Physical Education (CPE)

These semester-long courses include instruction in two or three activity units. Each course offers opportunities for student growth in health-enhancing fitness activities, movement skills and concepts, and personal and social responsibility as they relate to the CPE course that is selected. As an extension of Foundations of Personal Fitness and Sport, students will apply the knowledge of components and principles of health and skill-related fitness when creating a personal fitness plan directly related to the CPE activity selected. CPE courses are all one semester, 0.5 credit courses, as listed in the course table below. Check with your school for which classes are available.

| CONCENTRATED PHYSICAL EDUCATION (CPE) COURSES Prerequisite: *Foundation of Personal Fitness and Sport* | |
| --- | --- |
| **COURSE TITLE** | **COURSE CODE** |
| **CPE—Net Sports** | HPE2011 |
| **CPE—Team Sports** | HPE2012 |
| **CPE—Individual Sport** | HPE2009 |
| **CPE—Lifetime Sport** | HPE2010 |

## Specialty Physical Education (SPE)

These semester-long courses offer in-depth instruction in the selected activity. Students will have opportunities to apply movement skills to advanced tactics and concepts of the chosen activity. Students will be given leadership roles as an opportunity for growth in personal and social responsibility. As an extension of Foundations of Personal Fitness and Sport, students will apply their knowledge of components and principles of health and skill-related fitness when creating a personal fitness plan. Students will deepen their understanding of personal fitness plans and goal setting as they apply directly to the SPE activity selected.

SPE courses are all one semester, 0.5 credit courses, as listed in the course table below. Check with your school for which classes are available.

| SPECIALTY PHYSICAL EDUCATION (SPE) COURSES Prerequisite: *Foundation of Personal Fitness and Sport* | |
| --- | --- |
| **COURSE TITLE** | **COURSE CODE** |
| **SPE—Athletic Guidance and Training** | HPE2014 |
| **SPE—Basketball** | HPE2016 |
| **SPE—Dance** | HPE2017 |
| **SPE—Floor/Street Hockey** | HPE2018 |
| **SPE—Fitness** | HPE2019 |
| **SPE—Flag Football** | HPE2020 |
| **SPE—Lacrosse** | HPE2021 |
| **SPE—Soccer** | HPE2022 |
| **SPE—Ultimate** | HPE2024 |
| **SPE—Volleyball** | HPE2025 |
| **SPE—Weight/Strength Training & Conditioning** | HPE2026 |
| **SPE—Yoga/Stretching** | HPE2028 |

# Interdisciplinary and Research Courses

Interdisciplinary and Research Courses are academic courses that provide students with a combination of academic and practical skills. The emphasis is on research and thinking skills as a culminating course that allows students to apply and take the skills to transfer and apply in a range of situations.

## INTERNATIONAL BACCALAUREATE (IB) COURSES
Visit *http://coursebulletin.montgomeryschoolsmd.org/CourseLists/Index/92* for course descriptions

*Offered only at:* **Bethesda-Chevy Chase HS, Albert Einstein HS, John F. Kennedy HS, Richard Montgomery HS, Rockville HS, Seneca Valley HS, Springbrook HS, Watkins Mill HS**

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|
| IB Personal and Professional Skills A/B | ITR 2002 A/B | 0.5 | CM CDP (AL) | *IB Career-Related Core* |
| IB Personal and Professional Skills C | ITR 2002C | 0.5 | (AL) | *IB Career-Related Core* |
| Theory of Knowledge 1/2 | SOC2015 SOC2016 | 0.5 | CM IB NCAA (AL) | *IB Diploma Core* |
| IB Theory of Knowledge Extended Essay A/B | SOC2017 A/B | 0.5 | CM IB NCAA (AL) | *IB Diploma Core* |

## ADVANCED PLACEMENT (AP) CAPSTONE PROGRAM COURSES
*Offered only at:* **Blake HS, Clarksburg HS, Damascus HS, Poolesville HS**

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO |
|---|---|---|---|
| AP Seminar A/B | NSS2023 A/B | 0.5 | CM (AL) |
| AP Research A/B | NSS2024 A/B | 0.5 | CM (AL) |

## BLAIR AND POOLESVILLE MAGNET COURSES
*Offered only at:* **Montgomery Blair HS, Poolesville HS**

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO |
|---|---|---|---|
| Research and Experimentation for Problem Solving 1 A/B | TEC2009 A/B | 0.5 | CM (AL) |
| Research and Experimentation for Problem Solving 2 A/B | TEC2010 A/B | 0.5 | CM (AL) |
| Research Design | TEC2011 | 0.5 | CM (AL) |
| Research and Experimentation: Engineering for Problem Solving | ENR2001 | 0.5 | CM (AL) |
| Research Project A/B | ENR2004 A/B | 0.5 | CM (AL) |
| Guided Research A/B | ENR2002 A/B | 0.5 | CM (AL |

# Mathematics

In the 21st century, a deep understanding of mathematics, and the ability to apply that understanding, is more important than it has ever been. In Montgomery County Public Schools (MCPS), and across the country, mathematics instruction is changing to make sure we provide our students with the skills and knowledge they need for success in college and the workplace. Students in the MCPS Mathematics program develop a deep understanding of mathematics by building a strong foundation of number sense at the elementary level before moving to more advanced content. MCPS believes that the course options available to students will prepare them for success in college and careers. Students who are successful in the grade-level content will be able to reach Algebra 1 by Grade 8 and an Advanced Placement course, such as AP Calculus, in high school. New minimum qualifications for admission to University System of Maryland colleges and universities include completion of Algebra 2 or a significant mathematics course with advanced content during senior year. The College and Career Readiness Act of 2013 established the statutory language found in Maryland Education Code Annotated 7-205.1. This statute established that "Beginning with students entering the 9th grade class of school year 2014–2015, each student shall enroll in a mathematics course in each year of high school that the student attends, up to a maximum of 4 years of attendance, unless in the 5th or 6th year a mathematics course is needed to meet a graduation requirement."

**Four credits in mathematics, including 1 credit in algebra and 1 credit in geometry, are required for graduation.** MSDE further specifies that students must earn credits in mathematics courses, including one with instruction in algebra aligned with the MHSA for algebra or one or more credits in subsequent mathematics courses for which Algebra I is a prerequisite; and one with instruction in geometry, aligned with the content standards for geometry.

Students must enroll in a mathematics-based course for each year they attend high school, up to a maximum of four years of attendance, unless in the fifth or sixth year a mathematics course is needed to meet a graduation requirement. This is required by MSDE, as well as by many colleges and universities to which MCPS students may want to apply. Students are advised to consult with their academic advisors/counselors to ensure they meet all mathematics graduation requirements, and to examine carefully any additional admission requirements that may be in effect at a prospective postsecondary school of interest.

| MATHEMATIC COURSES | | | | |
|---|---|---|---|---|
| Visit *http://coursebulletin.montgomeryschoolsmd.org/CourseLists/Index/234* for course descriptions | | | | |
| **COURSE TITLE** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES/COREQUISITES** |
| **Algebra 1 A/B** | MAT2000 A/B | 0.5 | NCAA | |
| **Related Mathematics A/B** | MAT2001 A/B | 0.5 | | **Corequisite:** *Algebra 1 A/B* |
| **Geometry A/B** | MAT2003 A/B | 0.5 | NCAA | *Algebra 1 A/B* |
| **Geometry, Honors A/B** | MAT2004 A/B | 0.5 | CM NCAA (H) | *Algebra 1 A/B* |
| **2 YR Algebra 2 A/B** | MAT2015 A/B | 0.5 | CM NCAA* | *Algebra 1 A/B and Geometry A/B* |
| **2 YR Algebra 2 C/D** | MAT2015 C/D | 0.5 | CM NCAA* | *2 YR Algebra 2 A/B or Algebra 2 A* |
| **Algebra 2 A/B** | MAT2011 A/B | 0.5 | CM NCAA | *Algebra 1 A/B and Geometry A/B* |
| **Algebra 2, Honors A/B** | MAT2012 A/B | 0.5 | CM NCAA (AL) | *Algebra 1 A/B and Geometry A/B or Honors Geometry A/B* |
| **Introduction to Statistics A/B** | MAT2046 A/B | 0.5 | CM (AL) | *Algebra 2 A/B* |
| **Quantitative Literacy A/B** | MAT2032 A/B | 0.5 | NCAA | *Algebra 2 A/B or 2 YR Algebra 2 A/B or C/D* |
| **Precalculus A/B** | MAT2031 A/B | 0.5 | CM NCAA | *Algebra 2 A/B* |
| **Precalculus, Honors A/B** | MAT2048 A/B | 0.5 | CM NCAA (AL) | *Algebra 2 A/B or Honors Algebra 2 A/B* |
| **Calculus with Applications A/B** | MAT2049 A/B | 0.5 | CM NCAA (AL) | *Precalculus A/B or Honors Precalculus A/B* |
| **Calculus AB, AP, A/B** | MAT2040 A/B | 0.5 | CM NCAA AP | *Precalculus A/B or Honors Precalculus A/B* |
| **Calculus BC, AP, A/B** | MAT2041 A/B | 0.5 | CM NCAA AP | *Honors Precalculus A/B* |
| **Statistics, AP, A/B** | MAT2068 A/B | 0.5 | CM NCAA AP | *Algebra 2 A/B* |
| **Multivariable Calculus and Differential Equations A/B** | MAT2038 A/B | 0.5 | CM NCAA (AL) | *AP Calculus BC, A/B or Magnet Analysis 1 A/B* |
| **Mathematical Approach to Problem Solving A/B** | MAT2026 A/B | 0.5 | | *METS students only* |
| **Math 180 Course 2** | MAT2077 | | Tier 3 intervention; elective credit | |

*NCAA counts one year of 2 YR Algebra 2 as 0.5 credit

## INTERNATIONAL BACCALAUREATE (IB) MATHEMATICS COURSES
### Offered only at: Bethesda-Chevy Chase HS, Albert Einstein HS, John F. Kennedy HS, Richard Montgomery HS, Rockville HS, Seneca Valley HS, Springbrook HS, Watkins Mill HS

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|
| **IB Analysis Statistic/Calculus SL 1A/B** | MAT2061 A/B | 0.5 | CM IB NCAA (AL) | *Algebra 2 A/B and Geometry A/B or Honors Geometry A/B* |
| **IB Analysis Statistic/Calculus HL 1A/B** | MAT2063 A/B | 0.5 | CM IB NCAA (AL) | *Algebra 2 A/B and Geometry A/B or Honors Geometry A/B* |
| **IB Analysis Statistic/Calculus HL 2A/B** | MAT2064 A/B | 0.5 | CM IB NCAA (AL) | *IB Analysis Statistic/Calculus HL 1A/B* |
| **IB Analysis Statistic/Calculus SL 2A/B** | MAT2062 A/B | 0.5 | CM IB NCAA (AL) | *IB Analysis Statistic/Calculus SL 1A/B* |
| **IB Application Statistics/Calculus SL 1A/B** | MAT2081 A/B | 0.5 | CM IB NCAA (AL) | *Algebra 2 A/B and Geometry A/B or Honors Geometry A/B* |
| **IB Application Statistics/Calculus HL 1 A/B** | MAT2083 A/B | 0.5 | CM IB NCAA (AL) | *Algebra 2 A/B and Geometry A/B or Honors Geometry A/B* |
| **IB Application Statistics/Calculus SL 2 A/B** | MAT2082 A/B | 0.5 | CM IB NCAA (AL) | *IB Application Statistics/Calculus SL 1A/B* |
| **IB Application Statistics/Calculus HL 2 A/B** | MAT2084 A/B | 0.5 | CM IB NCAA (AL) | *IB Application Statistics/Calculus HL 1A/B* |

## BLAIR AND POOLESVILLE MAGNET COURSES
### Offered only at: Montgomery Blair HS, Poolesville HS

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|
| **Magnet Geometry A/B** | MAT2008 A/B | 0.5 | CM NCAA (AL) | *Algebra 1 A/B* |
| **Magnet Precalculus A/B** | MAT2029 A/B | 0.5 | CM NCAA (AL) | *Magnet Geometry A/B or Honors Geometry A/B* |
| **Magnet Precalculus C/D** | MAT2030 C/D | 0.5 | CM NCAA (AL) | *Magnet Precalculus A/B* |
| **Magnet Functions A/B** | MAT2036 A/B | 0.5 | CM NCAA (AL) | *Magnet Geometry A/B or Honors Geometry A/B* |
| **Magnet Analysis 1 A/B** | MAT2037 A/B | 0.5 | CM NCAA (AL) | *Magnet Precalculus A/B/C/(D) or Honors Precalculus A/B* |
| **Applied Statistics** | MAT2039 | 0.5 | CM NCAA (AL) | *Magnet Analysis 1 A/B or AP Calculus BC A/B* |
| **Discrete Mathematics** | MAT2053 | 0.5 | CM NCAA (AL) | *Magnet Precalculus A/B/C/(D) or Magnet Functions A/B or Analysis of Algorithms or AP Computer Science* |
| **Linear Algebra** | MAT2054 A | 0.5 | CM NCAA (AL) | *Magnet Analysis I A/B* |
| **Complex Analysis** | MAT2055 | 0.5 | CM NCAA (AL) | *Multivariable Calculus & Differential Equations* |
| **Vector Calculus A/B** | MAT2050 A/B | 0.5 | CM NCAA (AL) | *Magnet Analysis I A/B* |

**Additional information may be found at**

- Math, Science, and Computer Science Program at Montgomery Blair and Poolesville high schools

# Science

☞ **Three Next Generation Science Standards (NGSS) credits, including 1 life science (BC) credit and 1 physical science (PC) credit of organized instruction that integrate laboratory components and earth and space science concepts in each.**

Each credit engages students in the application of the science and engineering practices, the crosscutting concepts, and the disciplinary core ideas of Earth/space science, life science, physical science (chemistry and physics), engineering, and technology and aligns to the Maryland High School Assessment for science.

The goal of the science program is for all students to achieve full scientific literacy through standards-aligned, problem-based instruction. Students apply content knowledge through scientific and engineering practices to solve non routine problems. For high school graduation, each student must earn a minimum of 3 credits in science courses that are aligned to the Maryland Science Standards (Next Generation Science Standards). In selecting courses to meet the 3-credit requirement, students should seek a broad array of learning experiences that include experiences in each of the major disciplines of science (Earth/space, life, and physical science [physics and chemistry]). Recommended course sequences for students are shown in the following diagram. The varying pathways in the diagram are intended to represent options for students as they select core science courses.

| CORE PATHWAY | | | |
|---|---|---|---|
| **GRADE 9** | **GRADE 10** | **GRADE 11** | **GRADE 12** |
| NGSS Biology | NGSS Chemistry | NGSS Physics *OR* Astronomy w/Physics | AP/IB Science |
| | | | Science Elective |

Other NGSS-aligned sequences, including options for AP and IB, also are available. For example, other approved pathways might include but are not limited to the following:

| PATHWAY OPTION 1 | | | |
|---|---|---|---|
| **GRADE 9** | **GRADE 10** | **GRADE 11** | **GRADE 12** |
| NGSS Biology | NGSS Chemistry | AP/IB Science | AP/IB Science *OR* Science Elective |

| PATHWAY OPTION 2 | | | |
|---|---|---|---|
| **GRADE 9** | **GRADE 10** | **GRADE 11** | **GRADE 12** |
| NGSS Physics *OR* Astronomy w/Physics *OR* AP Physics | NGSS Chemistry | NGSS Biology *OR* AP/IB Biology | AP/IB Science |

**UPDATE: Beginning in 2022, the Maryland Comprehensive Assessment in science will be administered to students the year they are enrolled in the NGSS aligned Biology course. The 2022 administration (and beyond) will reflect the revised Maryland assessment, which exclusively addresses Life Science Disciplinary Core Ideas.**

| ALTERNATIVE TO DISSECTION |
|---|
| Dissection is one of many instructional methods that may be used in laboratory science courses. Students/parents/guardians may request alternatives to dissection from the teacher. Alternatives may include such materials as videos, computer programs, films, models, transparencies, charts, diagrams, and textbook overlays. |

# SCIENCE COURSES
Visit *http://coursebulletin.montgomeryschoolsmd.org/CourseLists/Index/182* for course descriptions

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES/COREQUISITES |
|---|---|---|---|---|
| Biology A/B (NGSS-BC) | SCI2000 A/B | 0.5 | NCAA | |
| Biology, Honors A/B (NGSS-BC) | SCI2001 A/B | 0.5 | CM NCAA (H) | |
| Biology, Honors DP (NGSS-BC) | SCI2108 | 0.5 | CM NCAA (H) (DP) | |
| Biology, AP A/B (NGSS-BC) | SCI2040 A/B | 0.5 | CM NCAA AP | *Biology A/B* **Corequisite:** *Chemistry A/B* |
| Biology, AP A/B (DP) (NGSS-BC) | SCI2041 A/B | 1.0 | CM NCAA AP (DP) | *Biology A/B* **Corequisite:** *Chemistry A/B* |
| Chemistry A/B (NGSS-PC) | SCI2003 A/B | 0.5 | CM NCAA | *Algebra 1* **Corequisite:** *Geometry A/B* |
| Chemistry, Honors A/B (NGSS-PC) | SCI2004 A/B | 0.5 | CM NCAA (H) | *Algebra 1* **Corequisite:** *Geometry A/B* |
| Chemistry, Honors DP (NGSS-PC) | SCI2107 | 1.0 | CM NCAA (H) (DP) | *Algebra 1* **Corequisite:** *Geometry A/B* |
| Chemistry, AP A/B (NGSS-PC) | SCI2057 A/B | 0.5 | CM NCAA AP | *Chemistry A/B* **Corequisite:** *Algebra 2 A/B* |
| Chemistry, AP A/B (DP) (NGSS-PC) | SCI2059 A/B | 1.0 | CM NCAA AP (DP) | *Chemistry A/B and Algebra 2 A/B* |
| Physics A/B (NGSS-PC) | SCI2005 A/B | 0.5 | CM NCAA | **Corequisite:** *Geometry A/B* |
| Physics A/B, Honors (NGSS-PC) | SCI2006 A/B | 0.5 | CM NCAA (H) | **Corequisite:** *Geometry A/B* |
| Astronomy with Physics A/B (NGSS-PC) | SCI5085 A/B | 0.5 | CM NCAA | **Corequisite:** *Geometry A/B* |
| Physics 1, AP A/B (NGSS-PC) | SCI2072 A/B | 0.5 | CM AP (AL) | *Geometry* **Corequisite:** *Algebra 2* |
| Anatomy and Physiology A/B | SCI2060 A/B | 0.5 | CM NCAA (AL) | *Biology A/B* **Corequisite:** *Chemistry A/B* |
| Astronomy A/B | SCI2068 A/B | 0.5 | NCAA | **Corequisite:** *Chemistry A/B* |
| Environmental Science A/B | SCI2047 A/B | 0.5 | NCAA | *Biology A/B* |
| Environmental Science, Honors A/B | SCI2052 A/B | 0.5 | CM NCAA (H) | *Biology A/B* |
| Environmental Science, AP A/B (NGSS-SC) | SCI2046 A/B | 0.5 | CM NCAA AP | *Biology A/B* **Corequisite:** *Chemistry A/B recommended* |
| Forensic Science A/B | SCI2069 A/B | 0.5 | NCAA (AL) | *Biology A/B and Chemistry A/B or Physics A/B* |
| Horticultural Science A/B | AGB2000 A/B | 0.5 | | *Biology A/B* |
| Internship, Science A/B | SCI2008 A/B | 0.5 | CM | |
| Internship, Science A/B (DP) | SCI2009 A/B | 1.0 | CM (DP) | |
| Molecular Biology A/B | SCI2045 A/B | 0.5 | CM NCAA (AL) | *Biology A/B* **Corequisite:** *Chemistry A/B* |
| Nutrition Science A/B | SCI2026 A/B | 0.5 | | *Biology A/B* |
| Nutrition Science, Honors A/B | SCI2027 A/B | 0.5 | CM (H) | *Biology A/B* |
| Physics 2, AP A/B (NGSS-PC) | SCI2073 A/B | 0.5 | CM AP (AL) | *Physics 1, AP A/B* **Corequisite:** *Precalculus* |
| Physics C (MEM), AP A/B (NGSS-PC) | SCI2065 A/B | 0.5 | CM NCAA AP (AL) | *Physics A/B and Precalculus A/B* |
| Physics C (Mech), AP A/B (NGSS-PC) | SCI2064 A/B | 0.5 | CM NCAA AP (AL) | *Physics A/B and Precalculus A/B* |
| Physics C (Elec Mag), AP A/B (NGSS-PC) | SCI2063 A/B | 0.5 | CM NCAA AP (AL) | *Physics A/B and Precalculus A/B* |
| Wildlife Biology | SCI2043 | 0.5 | NCAA | *Biology A/B* |

## INTERNATIONAL BACCALAUREATE (IB) SCIENCE COURSES
*Offered only at:* **Bethesda-Chevy Chase HS, Albert Einstein HS, John F. Kennedy HS, Richard Montgomery HS, Rockville HS, Seneca Valley HS, Springbrook HS, Watkins Mill HS**

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|
| **IB Biology A/B DP (NGSS-BC)** | SCI2080 A/B | 1.0 | CM IB NCAA (AL) (DP) | *Honors or MCPSPIB Biology and Honors or MCPSIB Chemistry* |
| **IB Chemistry 1 A/B (NGSS-PC)** | SCI2087 A/B | 0.5 | CM IB NCAA (AL) | *Honors or MCPSIB Chemistry* |
| **IB Environmental Systems A/B (NGSS-SC)** | SCI2090 A/B | 0.5 | CM IB NCAA (AL) | |
| **IB Physics 1 A/B (NGSS-PC)** | SCI2096 A/B | 0.5 | CM IB NCAA (AL) | |
| **IB Physics 2 A/B (NGSS-PC)** | SCI2097 A/B | 0.5 | CM IB NCAA (AL) | *Precalculus and IB Physics 1* |
| **IB Design Technology A/B** | SCI2079 A/B | 0.5 | CM (AL) | |
| **IB Sports, Health, and Exercise Science A/B** | SCI2085 A/B | 0.5 | CM NCAA (AL) | |

## BLAIR AND POOLESVILLE MAGNET COURSES
*Offered only at:* **Montgomery Blair HS, Poolesville HS**

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|
| **Advanced Science 1, Physics DP (NGSS-PC)** | SCI2010 | 1.0 | CM NCAA (AL) (DP) | *Algebra 1* |
| **Advanced Science 2, Chemistry DP (NGSS-PC)** | SCI2011 | 1.0 | CM NCAA (AL) (DP) | *Advanced Science 1, Physics* |
| **Advanced Science 3, Earth Space Systems A/B** | SCI2012A/B | 0.5 | CM NCAA (AL) | |
| **Advanced Science 3, Earth/Space Sciences DP** | SCI2014 | 1.0 | CM NCAA (AL) (DP) | |
| **Advanced Science 4, Biology A/B (NGSS-BC)** | SCI2013A/B | 0.5 | CM NCAA (AL) | |
| **Advanced Science 4, Biology DP (NGSS-BC)** | SCI2015 | 1.0 | CM NCAA (AL) (DP) | |
| **Optics** | SCI2016 | 0.5 | CM NCAA (AL) | *Advanced Science 1 or Honors or AP Physics and AP Calculus BC or Analysis 1 A* |
| **Thermodynamics** | SCI2017 | 0.5 | CM NCAA (AL) | *Advanced Science 1 or Honors or AP Physics* |
| **Analytical Chemistry** | SCI2018 | 0.5 | CM NCAA (AL) | *Advanced Science 2 or AP Chemistry* |
| **Origins of Science** | SCI2025 | 0.5 | CM NCAA (AL) | |
| **Materials Science** | SCI2019 | 0.5 | CM NCAA (AL) | *Advanced Science 2 or AP Chemistry* |
| **Advanced Topics in Earth Science A/B** | SCI2020A/B | 0.5 | CM NCAA (AL) | *Honors Biology and Chemistry* |
| **Quantum Physics** | SCI2024 | 0.5 | CM NCAA (AL) | *Advanced Science 1 or Honors or AP Physics* |
| **Marine Biology** | SCI2022 | 0.5 | CM NCAA (AL) | *Honors Biology and Honors Chemistry* |
| **Introductory Genetic Analysis DP** | SCI2023 | 1.0 | CM NCAA (AL) (DP) | *Honors Biology and Honors Chemistry* |
| **Cellular Physiology** | SCI2021 | 0.5 | CM NCAA (AL) | *Honors Biology and Honors Chemistry* |
| **Introductory Physical Chemistry** | SCI2036 | 0.5 | CM NCAA (AL) | *Advanced Science 2 or AP Chemistry* |

**Additional information may be found at**

- Math, Science, and Computer Science Program at Montgomery Blair and Poolesville high schools

# Social Studies

☞ **Three credits in social studies are required for graduation, including 1 U.S. History credit, 1 National, State, and local Government credit, and 1 World History credit. Courses that satisfy those requirements are listed below.**

| | |
|---|---|
| **U.S. History** | • United States History A and B<br>• AP United States History A and B |
| **National, State, and Local Government** | • National, State, and Local Government A and B<br>• AP United States Government and Politics with NSL A and B |
| **World History** | • Modern World History A and B<br>• AP World History<br>• IB History 1 A and B and IB History 2 A and B |

The goal of social studies is to help create literate and well-informed citizens who actively participate in a democratic society. Students learn how to become effective citizens through

- active engagement in the learning processes and skills of the social sciences and history by using the inquiry process;
- development of a useful knowledge base in culture, economics, geography, history, and politics that incorporates a broadened narrative by including marginalized groups;
- learning the fundamental structures of human systems of interaction and how these systems have developed over time;
- application of concepts and knowledge of the past to problem-solving real-world issues of the present;
- application and evaluation of the role of an effective citizen, including putting citizen participation theory into practice;
- effective use of multiple sources of investigation for research and learning, including technology, primary and secondary source materials, the arts, film, and oral history; and
- development and communication of social studies concepts and knowledge using a variety of formats, with a special emphasis on analytic and argumentative writing.

The required social studies courses include state requirements for environmental literacy and financial literacy instruction.

Additional information regarding the MCPS Social Studies program can be found at *www.montgomeryschoolsmd.org/curriculum/socialstudies*.

## SOCIAL STUDIES COURSES
### Visit *http://coursebulletin.montgomeryschoolsmd.org/CourseLists/Index/209* for course descriptions

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|
| History, United States Honors A/B | SOC2001 A/B | 0.5 | CM NCAA (H) | |
| History, United States, AP A/B | SOC2022 A/B | 0.5 | CM NCAA AP | *A is a prerequisite for B* |
| Government—National, State, and Local (NSL) A/B | SOC2003 A/B | 0.5 | NCAA (7 SSL) | |
| Government—National, State, and Local (NSL) Honors A/B | SOC2004 A/B | 0.5 | CM NCAA (H) (7 SSL) | |
| Government, United States and Politics with NSL, AP A/B | SOC2021 A/B | 0.5 | CM NCAA AP (7 SSL) | *A is a prerequisite for B* |
| Government, United States Government and Politics, AP | SOC2023 | 0.5 | CM NCAA AP | *A is a prerequisite for B* |
| History, Modern World A/B | SOC2006 A/B | 0.5 | CM NCAA | |
| History, Modern World Honors A/B | SOC2007 A/B | 0.5 | CM NCAA (H) | |
| History, World, AP A/B | SOC2047 A/B | 0.5 | CM NCAA AP | *A is a prerequisite for B* |
| Comparative Religions | SOC2067 | 0.5 | CM NCAA | |
| Cultural Anthropology A/B | SOC2062 A/B | 0.5 | CM NCAA | *A is a prerequisite for B* |
| Economics | SOC2052 | 0.5 | CM NCAA | |
| Economics, Macroeconomics, AP | SOC2064 | 0.5 | CM NCAA AP | |
| Economics, Microeconomics, AP | SOC2065 | 0.5 | CM NCAA AP | |
| Global Issues in the 21st Century A/B | SOC2071 A/B | 0.5 | CM NCAA | *Global Issues in the 21st Century A is the prereq. for Global Issues in the 21st Century B.* |
| Government, Comparative Government and Politics A/B, AP | SOC2024 A/B | 0.5 | CM NCAA AP | *A is a prereq for B.* |

## SOCIAL STUDIES COURSES
Visit *http://coursebulletin.montgomeryschoolsmd.org/CourseLists/Index/209* for course descriptions

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|
| History, Africa South of the Sahara | SOC2030 | 0.5 | CM NCAA | |
| History, African American | SOC2019 | 0.5 | CM NCAA | |
| History, Ancient and Medieval | SOC2033 | 0.5 | CM NCAA | |
| History, African American 2 | SOC2020 | 0.5 | CM NCAA | |
| History, Ancient Mediterranean Civilizations | SOC2031 | 0.5 | CM NCAA | |
| History, Eastern Asia | SOC2038 | 0.5 | CM NCAA | |
| History, European | SOC2034 | 0.5 | CM NCAA | |
| History, European A/B | SOC2036 A/B | 0.5 | CM NCAA | *A is a prerequisite for B* |
| History, European, AP A/B | SOC2037 A/B | 0.5 | CM NCAA AP | *A is a prerequisite for B* |
| History, Latin American | SOC2028 | 0.5 | CM NCAA | |
| History, Medieval European | SOC2032 | 0.5 | CM NCAA | |
| History, Russian | SOC2029 | 0.5 | CM NCAA | |
| History, The Middle East | SOC2041 | 0.5 | CM NCAA | |
| World Military History | SOC2040 | 0.5 | CM | |
| Human Geography, AP A/B | SOC2068 A/B | 0.5 | CM NCAA AP | *A is a prerequisite for B* |
| Humanities A/B | SOC2066 A/B | 0.5 | CM NCAA | *A is a prerequisite for B* |
| International Human Rights 1 | SOC2026 | 0.5 | CM NCAA | |
| International Human Rights 2 | SOC2027 | 0.5 | | |
| Law 1 | SOC2059 | 0.5 | CM NCAA | |
| Law 2 | SOC2060 | 0.5 | CM NCAA | |
| LGBTQ+ Studies | SOC2087 | 0.5 | NCAA | |
| Model United Nations A/B | SOC2042 A/B | 0.5 | CM | *A is a prerequisite for B* |
| Philosophy | SOC2063 | 0.5 | CM NCAA | |
| Psychology 1/2 | SOC2053 SOC2054 | 0.5 | CM NCAA | *1 is a prerequisite for 2* |
| Psychology, AP A/B | SOC2069 A/B | 0.5 | CM NCAA AP | *A is a prerequisite for B* |
| Seminar in Peace Studies | SOC2086 | 0.5 | CM NCAA (AL) | |
| Sociology 1/2 | SOC2055 SOC2056 | 0.5 | CM NCAA | *1 is a prerequisite for 2* |
| Student Leadership A/B | NSS2005 NSS2006 | 0.5 | | *A is a prerequisite for B* |
| Women's Studies A/B | SOC2051 A/B | 0.5 | | *A is a prerequisite for B* |

## INTERNATIONAL BACCALAUREATE (IB) SOCIAL STUDIES COURSES
*Offered only at:* **Bethesda-Chevy Chase HS, Albert Einstein HS, John F. Kennedy HS, Richard Montgomery HS, Rockville HS, Seneca Valley HS, Springbrook HS, Watkins Mill HS**

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|
| IB Economics A/B | SOC2045 A/B | 0.5 | CM IB NCAA (AL) | *A is a prerequisite for B* |
| IB Geography A | SOC2073 A/B | 0.5 | CM IB (AL) | |
| IB Global Politics A/B | SOC2018 A/B | 0.5 | CM IB (AL) | *A is a prerequisite for B* |
| IB History 1 A/B | SOC2043 A/B | 0.5 | CM IB NCAA (AL) | *A is a prerequisite for B* |
| IB History 2 A/B | SOC2074 A/B | 0.5 | CM IB NCAA (AL) | *A is a prerequisite for B* |
| IB Psychology A/B | SOC2044 A/B | 0.5 | CM IB NCAA (AL) | *A is a prerequisite for B* |
| IB World Religions A/B | SOC2050 A/B | 0.5 | CM IB (AL) | *A is a prerequisite for B* |
| IB Business Management A/B | BMF2016 A/B | 0.5 | CM IB (H) | *A is a prerequisite for B* |
| IB Philosophy A/B | SOC2046 A/B | 0.5 | CM (AL) | |
| IB Social and Cultural Anthropology A/B | SOC2048 A/B | 0.5 | CM (AL) | |

# World Languages

🎓 **Two credits in a world language, which may include American Sign Language, may be used to complete Option 1 of elective credits required for graduation.** If students select a world language to fulfill the Maryland diploma requirements, it is recommended that the 2 world language credits be in the same language.

The goal of the World Languages program is to prepare students to be linguistically and culturally competent in languages other than English. The ability to communicate in a culturally appropriate manner with speakers of other languages is the key to success in the increasingly diverse global community of the 21st century. As students develop proficiency in world languages and an understanding of the underlying values and beliefs of other cultures, they gain the skills that are essential to meaningful communication. World Languages courses must be taken in sequential order. The prerequisite for all courses,except 1A, is either successful completion of the preceding course or a local placement test.

## MARYLAND SEAL OF BILITERACY

High school graduates who can function in two or more languages are equipped with the knowledge and skills to participate successfully in college, careers, and a diverse 21st century society. The Maryland Seal of Biliteracy is a diploma endorsement, authorized by Maryland law, that recognizes a student's high level of proficiency in listening, speaking, reading, and writing in one or more languages other than English. To receive a Maryland Seal of Biliteracy, a student must do the following:

- Pass the Maryland High School Assessment in English 10; AND
- Demonstrate Intermediate high proficiency in listening, speaking, reading, and writing in a language other than English, as measured by assessments that are aligned to ACTFL (The American Council on the Teaching of Foreign Languages) proficiency guidelines.

For more information about the approved assessments, please visit the website *https://www.montgomeryschoolsmd.org/curriculum/office/seal-of-biliteracy.aspx.*

### WORLD LANGUAGES LEVEL 1
**Visit *http://coursebulletin.montgomeryschoolsmd.org/CourseLists/Index/70* for course descriptions**
Students begin to learn to communicate orally and in writing in a culturally appropriate manner about topics related to daily life. They interpret basic information when listening and reading. Vocabulary and basic grammatical structures are taught within the context of these familiar topics. Culture is embedded throughout the course.

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO |
|---|---|---|---|
| Arabic 1 A/B | WLG2003 A/B | 0.5 | NCAA |
| Chinese 1 A/B | WLG2021 A/B | 0.5 | NCAA |
| French 1 A/B | WLG2041 A/B | 0.5 | NCAA |
| German 1 A/B | WLG2061 A/B | 0.5 | NCAA |
| Italian 1 A/B | WLG2071 A/B | 0.5 | NCAA |
| Japanese 1 A/B | WLG2081 A/B | 0.5 | NCAA |
| Russian 1 A/B | WLG2121 A/B | 0.5 | NCAA |
| Spanish 1 A/B | WLG2131 A/B | 0.5 | NCAA |

### WORLD LANGUAGES LEVEL 2
Students expand their ability to communicate orally and in writing in a culturally appropriate manner about topics related to daily life. They interpret information when listening and reading. Vocabulary and grammatical structures are taught within the context of these topics. Culture is embedded throughout the course.

**Prerequisite:** *Level 1 of the language*

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO |
|---|---|---|---|
| Arabic 2 A/B | WLG2012 A/B | 0.5 | CM NCAA (AL) |
| Chinese 2 A/B | WLG2022 A/B | 0.5 | CM NCAA |
| French 2 A/B | WLG2042 A/B | 0.5 | CM NCAA |
| German 2 A/B | WLG2062 A/B | 0.5 | CM NCAA |
| Italian 2 A/B | WLG2072 A/B | 0.5 | CM NCAA |
| Japanese 2 A/B | WLG2082 A/B | 0.5 | CM NCAA |
| Russian 2 A/B | WLG2122 A/B | 0.5 | CM NCAA |
| Spanish 2 A/B | WLG2132 A/B | 0.5 | CM NCAA |

## WORLD LANGUAGES LEVEL 3

Students continue to expand their ability to communicate orally and in writing in a culturally appropriate manner about a variety of familiar topics. They interpret detailed information when listening and reading. Vocabulary and more complex grammatical structures are taught within the context of these topics. Culture is embedded throughout the course.

**Prerequisite:** *Level 2 of the language*

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO |
|---|---|---|---|
| Arabic 3 A/B | WLG2013 A/B | 0.5 | CM NCAA (AL) |
| Chinese 3 A/B | WLG2023 A/B | 0.5 | CM NCAA |
| Chinese 3, Honors A/B | WLG2028 A/B | 0.5 | CM NCAA (H) |
| French 3 A/B | WLG2043 A/B | 0.5 | CM NCAA |
| French 3, Honors A/B | WLG2048 A/B | 0.5 | CM NCAA (H) |
| German 3 A/B | WLG2063 A/B | 0.5 | CM NCAA |
| German 3, Honors A/B | WLG2067 A/B | 0.5 | CM NCAA (H) |
| Italian 3 A/B | WLG2073 A/B | 0.5 | CM NCAA |
| Italian 3, Honors A/B | WLG2076 A/B | 0.5 | CM NCAA (H) |
| Japanese 3 A/B | WLG2083 A/B | 0.5 | CM NCAA |
| Japanese 3, Honors A/B | WLG2088 A/B | 0.5 | CM NCAA (H) |
| Russian 3 A/B | WLG2123 A/B | 0.5 | CM NCAA |
| Russian 3, Honors A/B | WLG2127 A/B | 0.5 | CM NCAA (H) |
| Spanish 3 A/B | WLG2133 A/B | 0.5 | CM NCAA |
| Spanish 3, Honors A/B | WLG2138 A/B | 0.5 | CM NCAA (H) |

## WORLD LANGUAGES LEVEL 4

Students communicate orally and in writing with increased proficiency in a culturally appropriate manner about a range of topics. They interpret detailed and extended information when listening and reading. Vocabulary and complex linguistic structures are taught within the context of these topics. Culture is embedded throughout the course.

**Prerequisite:** *Level 3 of the language*

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO |
|---|---|---|---|
| Arabic 4 A/B | WLG2014 A/B | 0.5 | CM NCAA |
| Chinese 4 A/B | WLG2024 A/B | 0.5 | CM NCAA |
| Chinese 4, Honors A/B | WLG2029 A/B | 0.5 | CM NCAA (H) |
| French 4 A/B | WLG2044 A/B | 0.5 | CM NCAA |
| French 4, Honors A/B | WLG2049 A/B | 0.5 | CM NCAA (H) |
| German 4 A/B | WLG2064 A/B | 0.5 | CM NCAA |
| German 4, Honors A/B | WLG2068 A/B | 0.5 | CM NCAA (H) |
| Italian 4 A/B | WLG2074 A/B | 0.5 | CM NCAA |
| Italian 4, Honors A/B | WLG2077 A/B | 0.5 | CM NCAA (H) |
| Japanese 4 A/B | WLG2084 A/B | 0.5 | CM NCAA |
| Japanese 4, Honors A/B | WLG2089 A/B | 0.5 | CM NCAA (H) |
| Russian 4 A/B | WLG2124 A/B | 0.5 | CM NCAA |
| Russian 4, Honors A/B | WLG2128 A/B | 0.5 | CM NCAA (H) |
| Spanish 4 A/B | WLG2134 A/B | 0.5 | CM NCAA |
| Spanish 4, Honors A/B | WLG2139 A/B | 0.5 | CM NCAA (H) |

## WORLD LANGUAGES LEVEL 5

Students continue to increase their proficiency in communicating orally and in writing in a culturally appropriate manner about a broad range of topics.  They interpret complex information when listening and reading.  Vocabulary and a variety of complex linguistic structures are taught within the context of these topics. Culture is embedded throughout the course.

**Prerequisite:** *Level 4 of the language*

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO |
|---|---|---|---|
| Chinese 5 A/B | WLG2025 A/B | 0.5 | CM NCAA (AL) |
| French 5 A/B | WLG2045 A/B | 0.5 | CM NCAA (AL) |
| German 5 A/B | WLG2065 A/B | 0.5 | CM NCAA (AL) |
| Italian 5 A/B | WLG2075 A/B | 0.5 | CM NCAA (AL) |
| Japanese 5 A/B | WLG2085 A/B | 0.5 | CM NCAA (AL) |
| Russian 5 A/B | WLG2123 A/B | 0.5 | CM NCAA (AL) |
| Spanish 5 A/B | WLG2135 A/B | 0.5 | CM NCAA (AL) |

## WORLD LANGUAGES LEVEL 6

Students communicate at a high level of proficiency orally and in writing in a culturally appropriate manner about a broad range of topics. They interpret complex information when listening and reading. Vocabulary and a variety of complex linguistic structures are taught within the context of these topics. Culture is embedded throughout the course.

**Prerequisite:** *Level 5 of the language*

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO |
|---|---|---|---|
| Chinese 6 A/B | WLG2026 A/B | 0.5 | CM NCAA (AL) |
| French 6 A/B | WLG2046 A/B | 0.5 | CM NCAA (AL) |
| German 6 A/B | WLG2066 A/B | 0.5 | CM NCAA (AL) |
| Japanese 6 A/B | WLG2086 A/B | 0.5 | CM NCAA (AL) |
| Russian 6 A/B | WLG2126 A/B | 0.5 | CM NCAA (AL) |
| Spanish 6 A/B | WLG2136 A/B | 0.5 | CM NCAA (AL) |

## AP WORLD LANGUAGES

These courses are for world languages students interested in college-level work. The courses link language and culture while developing students' proficiency in speaking, listening, reading, and writing. Students read, discuss, and react to a variety of texts orally and in writing in preparation for the AP examination.

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO |
|---|---|---|---|
| Chinese Language and Culture, AP A/B | WLG2038 A/B | 0.5 | CM NCAA AP |
| French Language and Culture, AP A/B | WLG2057 A/B | 0.5 | CM NCAA AP |
| Italian Language and Culture, AP A/B | WLG2078 A/B | 0.5 | CM NCAA AP (AL) |
| Japanese Language and Culture, AP A/B | WLG2081 A/B | 0.5 | CM NCAA AP |
| Spanish Language and Culture, AP A/B | WLG2152 A/B | 0.5 | CM NCAA AP |
| Spanish Literature, AP A/B | WLG2153 A/B | 0.5 | CM NCAA AP |

## SPANISH FOR SPANISH SPEAKERS

Spanish for Spanish Speakers provides language instruction for students with proficiency in Spanish, either because it is their first language or because it is spoken extensively in the home. Each course integrates history, culture, language, and connections related to the Spanish-speaking world.

Spanish for Spanish Speakers 3 A/B is an advanced-level course designed to prepare students for AP Spanish Language or AP Spanish Literature exam.

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO |
|---|---|---|---|
| Spanish for Spanish Speakers 1 A/B | WLG2141 A/B | 0.5 | NCAA |
| Spanish for Spanish Speakers 2 A/B | WLG2142 A/B | 0.5 | NCAA |
| Spanish for Spanish Speakers 3 A/B | WLG2143 A/B | 0.5 | CM NCAA (AL) |

## LATIN

As students progress through the sequence of Latin courses, they build a foundation of Latin vocabulary and grammar. They study aspects of Roman life and history and the works of major authors such as Cicero, Pliny, Horace, Ovid, Tibullus, or Plautus. In preparation for the AP Vergil exam, students translate the Aeneid from Latin into English, analyzing Vergil's style as well as studying the cultural, social, and political context of the literature.

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO |
|---|---|---|---|
| Latin 1 A/B | WLG2101 A/B | 0.5 | NCAA |
| Latin 2 A/B | WLG2102 A/B | 0.5 | NCAA |
| Latin 3 A/B | WLG2103 A/B | 0.5 | CM NCAA |
| Latin 3, Honors A/B | WLG2106 A/B | 0.5 | CM NCAA (H) |
| Latin 4 A/B | WLG2104 A/B | 0.5 | CM NCAA |
| Latin 4, Honors A/B | WLG2017 A/B | 0.5 | CM NCAA (H) |
| AP Latin, AP A/B | WLG2018 A/B | 0.5 | CM NCAA AP |

## AMERICAN SIGN LANGUAGE

Students use American Sign Language to communicate about daily life with basic vocabulary and simple grammatical structures. They explore the cultural and linguistic heritage of the Deaf community and its influence.

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO |
|---|---|---|---|
| American Sign Language 1 A/B | WLG2001 A/B | 0.5 | NCAA |
| American Sign Language 2 A/B | WLG2018 A/B | 0.5 | NCAA |
| American Sign Language 3 A/B | WLG2003 A/B | 0.5 | NCAA |

# International Baccalaureate World Languages Courses

**Offered only at:** *Bethesda-Chevy Chase HS, Einstein HS, Kennedy HS, Richard Montgomery HS, Rockville HS, Seneca Valley HS, Springbrook HS, Watkins Mill HS*

## Level 2
Students receive intensive training in the basic foundations of the language to develop proficiency in both oral and written expression at the appropriate level. Students master the MCPS Level 2 modern foreign language curriculum and study the literature, culture, and civilization of countries where the target language is spoken.

## Level 3
Students develop higher-level language skills and vocabulary needed for increased proficiency in oral and written expression, listening, and reading comprehension. Students master the MCPS Level 3 modern foreign language curriculum; are introduced to literary analysis; and study the literature, culture, history, and current events in countries where the target language is spoken.

## Level 4
IB Level 4 foreign language courses comprise the first year of a two-year sequence to prepare students for the standard-level IB foreign language exam. Students strengthen their knowledge and fluency in oral and written language and broaden their understanding of culture and civilization. Composition objectives for specific writing assignments are correlated with the literature, culture, and civilization topics.

## Level 5
Students complete their preparation for the standard-level IB foreign language and the Advanced Placement language exams. Emphasis is placed on reading comprehension, interpretation, analysis, and oral proficiency. Students analyze a wide variety of spoken and written materials and life and civilization in pertinent countries.

## Level 6
IB Level 6 foreign language courses emphasize the composition of well-constructed extended essays and oral proficiency at the near-native level. Instruction emphasizes critical analysis of the structural and stylistic characteristics of works, increased oral and written proficiency, and continued in-depth study of the life and civilization of pertinent countries. Students are prepared for the higher-level IB exam.

## Level 7
Students continue to develop their reading and writing skills in preparation for the IB higher-level language examination.

| INTERNATIONAL BACCALAUREATE (IB) WORLD LANGUAGES COURSES Visit *http://coursebulletin.montgomeryschoolsmd.org/CourseLists/Index/70* for course descriptions | | | |
|---|---|---|---|
| **COURSE TITLE** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** |
| **IB Arabic 3 A/B** | WLG2201 A/B | 0.5 | CM IB NCAA (AL) |
| **IB Arabic 4 A/B** | WLG2202 A/B | 0.5 | CM IB NCAA (AL) |
| **MCPSPIB Chinese 2 A/B** | WLG2251 A/B | 0.5 | CM PREIB NCAA (AL) |
| **MCPSPIB Chinese 3 A/B** | WLG2252 A/B | 0.5 | CM PREIB NCAA (AL) |
| **IB Chinese 3 A/B** | WLG2203 A/B | 0.5 | CM IB NCAA (AL) |
| **IB Chinese 4 A/B** | WLG2204 A/B | 0.5 | CM IB NCAA (AL) |
| **IB Chinese 5 A/B** | WLG2205 A/B | 0.5 | CM IB NCAA (AL) |
| **IB Chinese 6 A/B** | WLG2206 A/B | 0.5 | CM IB NCAA (AL) |
| **IB Chinese 7 A/B** | WLG2207 A/B | 0.5 | CM IB NCAA (AL) |
| **MCPSPIB French 2 A/B** | WLG2257 A/B | 0.5 | CM PREIB NCAA (AL) |
| **MCPSPIB French 3 A/B** | WLG2258 A/B | 0.5 | CM PREIB NCAA (AL) |
| **IB French 4 A/B** | WLG2208 A/B | 0.5 | CM IB NCAA (AL) |
| **IB French 5 A/B** | WLG2209 A/B | 0.5 | CM IB NCAA (AL) |
| **IB French 6 A/B** | WLG2210 A/B | 0.5 | CM IB NCAA (AL) |
| **IB French 7 A/B** | WLG2211 A/B | 0.5 | CM IB NCAA (AL) |

## INTERNATIONAL BACCALAUREATE (IB) WORLD LANGUAGES COURSES

Visit *http://coursebulletin.montgomeryschoolsmd.org/CourseLists/Index/70* for course descriptions

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO |
|---|---|---|---|
| IB Italian 4 A | WLG2216 A/B | 0.5 | CM IB NCAA (AL) |
| IB Italian 5 A/B | WLG2217 A/B | 0.5 | CM IB NCAA (AL) |
| IB Italian 6 A/B | WLG2218 A/B | 0.5 | CM IB NCAA (AL) |
| IB Japanese 3 A | WLG2220 A/B | 0.5 | CM IB NCAA (AL) |
| IB Japanese 4 A | WLG2221 A/B | 0.5 | CM IB NCAA (AL) |
| IB Russian 3 A/B | WLG2224 A/B | 0.5 | CM IB NCAA (AL) |
| IB Russian 4 A/B | WLG2225 A/B | 0.5 | CM IB NCAA (AL) |
| MCPSPIB Spanish 2 A/B | WLG2266 A/B | 0.5 | CM PREIB NCAA (AL) |
| MCPSPIB Spanish 3 A/B | WLG2267 A/B | 0.5 | CM PREIB NCAA (AL) |
| IB Spanish 4 A/B | WLG2226 A/B | 0.5 | CM IB NCAA (AL) |
| IB Spanish 5 A/B | WLG2227 A/B | 0.5 | CM IB NCAA (AL) |
| IB Spanish 6 A/B | WLG2228 A/B | 0.5 | CM IB NCAA (AL) |
| IB Spanish 7 A/B | WLG2229 A/B | 0.5 | CM IB NCAA (AL) |

# Montgomery County Public Schools

*Strong academics and real-world professional experiences so students can design their own future and stand out among the best.*

## WHAT ARE CAREER READINESS PROGRAMS?

Career readiness is an educational approach combining strong academics with technical skills and real-world professional experiences that gives students a competitive advantage for college and lifelong career success.

### CAREER READINESS PROGRAMS COMBINE

**COLLEGE CREDIT**     **INDUSTRY CERTIFICATIONS**     **TWO-YEAR ASSOCIATE'S DEGREE**     **INTERNSHIPS**

Each MCPS high school offers rigorous programs where students explore their interests and get a head start on reaching their career and college goals.

## WHY CAREER READINESS?

MCPS recognizes that as the economy, the cost of college, and the labor market continue to change, a more comprehensive approach in high school is needed to ensure every graduate leaves prepared for their next step.

**CAREER READINESS PROGRAMS HELP STUDENTS DESIGN THEIR OWN FUTURE BY**
- Offering a combination of both college-level and career readiness courses
- Providing relevant experiences and internships where students learn skills that make them more marketable to employers

**STUDENTS WILL LEAVE HIGH SCHOOL WITH MORE OPTIONS AND BETTER EQUIPPED TO NAVIGATE CHANGES THAT INCLUDE**
- Growth in IT, engineering, business management, health care, and other high-demand industries
- Higher college costs and more student debt
- More career opportunities for skilled technical workers with some level of postsecondary education

## CAREER CLUSTERS

MCPS organizes career programming into 12 Career and Technical Education (CTE) Clusters. These career clusters will help direct you toward focused programs of study with high school plans to help you choose courses that align with your future goals.

- Arts, Media and Communications
- Business Management and Finance
- Career Experiences and Internships
- Construction and Development
- Consumer Services, Hospitality and Tourism
- Education Training and Child Studies
- Environmental Agriculture, and Natural Resources
- Health and Biosciences
- Information Technology and Computer Science
- Law, Government, Public Safety, and Administration
- Manufacturing, Engineering and Technology
- Transportation, Distribution, and Logistics

*Montgomeryschoolsmd.org/Career-Readiness*

EGPS • 0277.21

# CAREER READINESS PROGRAMS OF STUDY (POS)

The Career Readiness Programs of Study (POS) are designed to prepare high school students for the 21st century global economy and its rapidly changing workforce needs. All programs are aligned to academic and technical skill standards to ensure students are adequately prepared for college and careers. Many POSs provide opportunities for students to earn industry certifications, college credit, and work-based learning experience through internships. Montgomery County high schools offer an extensive array of POSs for students. These state-approved programs satisfy the career development graduation requirement and are designed to help students acquire the specialized knowledge, skills, attitudes, and work habits required for postsecondary education and employment. Schools that offer specific POSs are included in the POS section. Schools listed are approved to offer a full POS; however, not all schools will offer all courses every year. For additional information about Career Readiness visit *www.montgomeryschoolsmd.org/career-readiness/*

🎓 **Completion of a state-approved program of study (POS) may be used to complete Option 2 of elective credits required for graduation.**

## COLLEGE CREDIT AVAILABLE AT MC FOR MCPS STUDENTS WHO COMPLETE CAREER READINESS PROGRAMS OF STUDY

MCPS graduates who successfully complete select Career Readiness programs of study may earn free college credit after receiving grades of B or higher in courses articulated with Montgomery College (MC). Earned credits may be used toward an associate's degree at MC. For more information regarding the MC articulated credit and related programs of study, students should contact their high school counselor and visit *https://cms.montgomerycollege.edu/CTE/*. MC offers financial aid to help pay fees for qualifying students. Call 301-279-5000 at MC for college-related information, including information from the Financial Aid Office and an application packet.

Students are advised that there are additional options for earning college credit while an MCPS student. For more information about these opportunities, visit *www.montgomeryschoolsmd.org/curriculum/partnerships/dual-enrollment.aspx*.

# PROGRAMS OF STUDY IN ARTS, MEDIA, AND COMMUNICATIONS

## • AUDIOVISUAL COMMUNICATIONS AND BROADCAST TECHNOLOGIES POS

The Audiovisual Communications and Broadcast Technologies program prepares individuals to apply technical knowledge and skills to the production of radio, television, and digital media program, and related operations. The program includes instruction in sound, lighting, and camera operation and maintenance; power and feed control; studio operations; production preparation; broadcast engineering; related computer applications; and specialized applications such as news, entertainment, live talk, sports, commercials, and taping. The program comprises a foundation course, two courses focused on a specific specialization in audiovisual communications production, and a final culminating course.

| Industry Certifications that Students May Earn |
|---|
| • Adobe Creative Suite<br>» Dreamweaver<br>» Illustrator<br>» InDesign<br>» Photoshop<br>» Premiere Pro |

| BROADCAST MEDIA POS VIDEO PRODUCTION<br>*Offered only at:* James Hubert Blake HS, Gaithersburg HS, John F. Kennedy HS, Northwood HS, Paint Branch HS, Quince Orchard HS, Winston Churchill HS | | | | | |
|---|---|---|---|---|---|
| **COURSE TITLE** | **POS REQUIRE-MENTS** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **Introduction to Interactive Media A/B** | Required Coursework | AMC2007 A/B | 0.5 | | **Corequisite:** *Recommended Foundation of Art A/B* |
| **Video Production A/B** | | AMC2004 A/B | 0.5 | | *Introduction to Interactive Media A/B* |
| **Electronic Video Field Production A/B** | | AMC2005 A/B | 0.5 | | *Video Production A/B* |
| **Dual Enrollment Arts Media and Communications** | *Capstone Options | AMC5120 | 0.5 | CM (AL) | *Electronic Video Field Production A/B* |
| **Internship, Arts Media and Communications (1 credit)** | | AMC2009 | 0.5 | | *Electronic Video Field Production A/B* |
| **Guided Research, Arts, Media and Communications** | | AMC2008 A/B | 0.5 | | *Electronic Video Field Production A/B* |

*Select one (1 credit A/B) capstone option to complete the POS.*

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/television.aspx*.

# INTERACTIVE MEDIA PRODUCTION POS

Interactive Media Production (IMP) provides students with a strong foundation in arts and communication, with particular emphasis on design, graphic and media communications, interactive technologies, and project development. Throughout the program, students produce an assortment of three-dimensional models, two-dimensional animations, layered images, streaming media, and web pages. They also will use a variety of software applications to design "apps" and develop video games.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • Adobe Creative Suite<br>» Dreamweaver<br>» Illustrator<br>» InDesign<br>» Photoshop<br>» Premiere Pro | • Community College of Baltimore County (CCBC)—12 credits<br>• Montgomery College—7 credits |

| INTERACTIVE MEDIA PRODUCTION POS<br>*Offered only at:* James Hubert Blake HS, Quince Orchard HS | | | | | |
|---|---|---|---|---|---|
| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
| **Introduction to Interactive Media A/B** | Required Coursework | AMC2007 A/B | 0.5 | | **Corequisite:** *Recommended Foundation of Art A/B* |
| **Game Development A/B** | | ITC 2002 A/B | 0.5 | | *Introduction to Interactive Media A/B* |
| **Advanced Game Development A/B** | | ITC 2003 A/B | 0.5 | (AL) | *Game Development A/B* |
| **Guided Research—Arts, Humanities, Media, and Communications A/B** | | AMC2008 A/B | 0.5 | | *Introduction to Interactive Media A/B (AMC2007A/B) and Game Development A/B (ITC2002 A/B)* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/game.aspx.*

# GRAPHIC COMMUNICATIONS POS

Students learn a variety of graphic design, imaging, and print-related skills to provide a foundation for all aspects of the graphic communications industry. Students use the latest in digital imagery, design, and production with computer technology, including advanced photo editing, presentation software, illustration and drawing software, digital video hardware and editing software, and multimedia and web design. Layout, design, and composition activities as well as offset lithographic production and binding techniques, are included in the program.

Students learn processes such as 35 mm continuous tone photography and screen printing of cards, posters, and T-shirts.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • Print ED National Industry Recognized Certifications and Equivalent of six months on-the-job experience.<br>» Introduction to Graphic Communication/Graphic Design<br>» Graphic Communication plus Digital File Preparation/Digital File Output<br>» Graphic Communication plus Offset Press<br>» Graphic Communication plus Digital Production and Printing<br>» Graphic Communication plus Screen Printing Technology | • Montgomery College—9 credits |

| GRAPHIC COMMUNICATIONS POS<br>*Offered only at:* Thomas Edison HS of Technology | | | | | |
|---|---|---|---|---|---|
| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
| **Graphic Design & Digital Media TP A/B** | Required Coursework | CON2010 A/B | 1.5 | 15 SSL TP | |
| **Advanced Graphic Design & Applications TP A/B** | | CON2011 A/B | 1.5 | (AL) 15 SSL TP | *Graphics Design & Digital Media TP A/B* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/printed.aspx.*

# PROGRAMS OF STUDY IN BUSINESS MANAGEMENT AND FINANCE

## NAF ACADEMY OF FINANCE POS

The NAF Academy of Finance is a national network of education, business, and community leaders who work together to ensure high school students are college, career, and future ready. In this program, students receive intensive coursework in economics, Finance and business principles. For more information, visit www.naf.org.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • NAF-Track Certification | • University of Maryland Eastern Shore—6 credits<br>• Montgomery College<br>    » Accounting and Finance—10 credits<br>    » Business Administration Services—6 credits<br>    » Business Management—6 credits<br>    » Marketing—6 credits |

| NAF ACADEMY OF FINANCE<br>*Offered only at:* Albert Einstein HS, Paint Branch HS, Col. Zadok Magruder HS, Northwest HS, | | | | | |
|---|---|---|---|---|---|
| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
| NAF Principles of Finance | Required Coursework | BMF2018 | 0.5 | CM | |
| Banking and Credit | | BMF2006 | 0.5 | | *NAF Principles of Finance* |
| NAF Accounting A/B | | BMF2030 A/B | 0.5 | | *NAF Accounting A prerequisite for NAF Accounting B* |
| Financial Planning | | BMF2005 | 0.5 | CM (AL) | *NAF Principles of Finance, Banking and Credit, NAF Accounting A/B* |
| NAF Applied Finance | | BMF2019 | 0.5 | | |
| AP Macroeconomics BMF | *Capstone Options | SOC2080 | 0.5 | CM (AL) AP | |
| AP Microeconomics BMF | | SOC2079 | 0.5 | CM (AL) AP | |
| NAF Entrepreneurship | | BMF2020 | 0.5 | | |
| International Finance | | BMF2008 | 0.5 | | |

*Select one (1 credit, A/B) of the capstone options to complete the program.

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/finance.aspx*.

# BUSINESS, MANAGEMENT, AND FINANCE PROGRAMS OF STUDY

The Business, Management, and Finance programs of study focus on four pathways. Each program pathway includes rigorous academics, broad industry knowledge and skills, and exposure to careers within the field.

Students in all pathways will be required to take two foundation courses—Principles of Business Management and Entrepreneurship and Principles of Accounting and Finance. All students will learn effective decision-making techniques in financial management, business communication, problem solving, teamwork, and networking skills. Human resource topics such as diversity in the workplace, ethics, employer/employee rights, discrimination, accountability, time management, and setting priorities will be covered.

Upon completion of the two foundation courses, students are required to complete two additional courses in their selected program of study. These include Business Management, Accounting, Marketing, or Business Administrative Services. The final course in the Business Management, Accounting, and Marketing pathways includes options for a capstone course, dual enrollment, internship, or the opportunity to take Advanced Placement Economics.

| BMF Pathway | Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|---|
| • Accounting and Finance | • Finance A*S*K Certification<br>• Fundamental Business Concepts A*S*K Certification<br>• State Skill Certificate | • University of Maryland Eastern Shore—9 credits |
| • Business Administrative Services | • Fundamental Business Concepts A*S*K Certification<br>• Microsoft Office Specialist Certification | • University of Maryland Eastern Shore—9 credits |
| • Business Management | • Entrepreneurship/ Management A*S*K Certification<br>• Fundamental Business Concepts A*S*K Certification | • University of Maryland Eastern Shore—6 credits |
| • Marketing | • Fundamental Marketing Concepts A*S*K Certification<br>• Fundamental Business Concepts A*S*K Certification | • University of Maryland Eastern Shore—6 credits |

## ACCOUNTING AND FINANCE POS
### Offered only at: Montgomery Blair HS, Gaithersburg HS, Col. Zadok Magruder HS, Northwest HS

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Entrepreneurship and Business Management 1 A/B | Required Coursework | BMF2026A/B | 0.5 | CM | *Entrepreneurship A* |
| Accounting A/B | | BMF2009 A/B | 0.5 | | *Accounting A* |
| Accounting, Advanced A/B, Honors | | BMF2010 A/B | 0.5 | CM (H) | *Accounting A & B* |
| Internship, Business Management and Finance (1.0 credit needed) | *Additional Program Opportunities | BMF2008 | 0.5 | | |
| Accounting & Finance and Entrepreneurship Capstone A/B | | BMF2022 A/B | 0.5 | CM (AL) AP | |
| AP Macroeconomics/AP Microeconomics BMF | | SOC2079 SOC2080 | 0.5 | CM (AL) AP | |
| Dual Enrollment Course Options (1.0 credit needed) | | BMF5100 BMF5102 BMF5103 BMF5108 | 0.5 | CM (AL) | |

## BUSINESS ADMINISTRATIVE SERVICES POS
### Offered only at: Winston Churchill HS, John F. Kennedy HS

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Entrepreneurship and Business Management 1 A/B | Required Coursework | BMF2026 A/B | 0.5 | CM | |
| Accounting A/B | | BMF2009 A/B | 0.5 | | *Entrepreneurship and Business Management 1 A/B* |
| Software Applications by Design A/B | | BMF2000 A/B | 0.5 | | |
| Software Applications by Design, Advanced A/B | | BMF2001 A/B | 0.5 | CM | *Software Applications by Design A/B* |

## BUSINESS MANAGEMENT POS
### Offered only at: Montgomery Blair HS, James Hubert Blake HS, Gaithersburg HS, Northwood HS, Sherwood HS

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Entrepreneurship and Business Management 1 A/B | Required Coursework | BMF2026 A/B | 0.5 | CM | |
| Accounting A/B | | BMF2009 A/B | 0.5 | | *Entrepreneurship and Business Management 1 A/B* |
| Advanced Business Management A/B | | BMF2004 A/B | 0.5 | (AL) | |
| Internship, Business Management and Finance (1.0 credit needed) | Additional Program Opportunities | BMF2008 | 0.5 | | *At least 3 credits in a Business Management and Finance POS* |
| Business Management and Entrepreneurship Capstone A/B | | BMF2021 A/B | 0.5 | | |
| AP Macroeconomics/AP Microeconomics BMF | | SOC2079 SOC2080 | | NCAA CM (AL) AP | |
| Dual Enrollment Course Options (1.0 credit needed) | | BMF5100 BMF5102 BMF5103 BMF5108 | | CM (AL) | |

## MARKETING POS
### Offered only at: Montgomery Blair HS, James Hubert Blake HS, Gaithersburg HS, Northwood HS

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Entrepreneurship and Business Management 1 A/B | Required Coursework | BMF2026 A/B | 0.5 | CM | |
| Accounting A/B | | BMF2009 A/B | 0.5 | | *Accounting A* |
| Marketing | | BMF2025 A/B | 0.5 | CM (H) | |
| Advanced Marketing A/B | Additional Program Opportunities | BMF2028 A/B | 0.5 | | |
| Internship, Business Management, and Finance | | BMF2008 | 0.5 | | |
| AP Macroeconomics/AP Microeconomics BMF | | SOC2079 SOC2080 | 0.5 | NCAA CM (AL) AP | |
| Dual Enrollment Course Options (1.0 credit needed) | | BMF5100 BMF5102 BMF5103 BMF5108 | 1.0 | CM (AL) | |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/hs-plans.aspx*.

## CAREER BASED ELECTIVES

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO |
|---|---|---|---|
| Personal Finance | BMF2024 | 0.5 | |
| IB Business Management A/B | BMF2016 A/B | 0.5 | (AL) |

# CAREER EXPERIENCES AND INTERNSHIPS

### APPRENTICESHIP MARYLAND POS

The Apprenticeship Maryland Program is based on a partnership among eligible employers, MCPS, students and parents. The program is for students ages 16 and up, and is designed to lead to sustainable employment and further education, based on selected career pathways. The program consists of at least 1 credit of related classroom instruction and a workplace component of at least 450 hours. The workplace component is a paid (at least minimum wage) mentored, on-the-job, work experience with a written student rating/work-based learning plan.

| APPRENTICESHIP MARYLAND POS<br>*Offered only at:* Montgomery Blair HS, James Hubert Blake HS, Gaithersburg HS, Northwood HS | | | |
|---|---|---|---|
| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER |
| Apprenticeship Related Instruction | Required Coursework | WBL2012 | 0.5 |
| Apprenticeship Work Based Learning 1 DP | | WBL2009 | 1.0 |
| Apprenticeship Work Based Learning 2 A/B | | WBL2010 A/B | 0.5 |
| Apprenticeship Work Based Learning 3 DP | | WBL2011 | 1.0 |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/apprenticeship/*

## •CAREER READINESS EDUCATION ACADEMY (CREA)

The Career Readiness Education Academy (CREA) is an academic and career readiness program for older English language learners (ELLs) in MCPS. Students in CREA have the opportunity to prepare for the GED exam and earn industry certifications in their chosen field of study. Students are referred to CREA if they are at least 18 years old and unlikely to meet graduation requirements before turning 21 and/or if they are interested in pursuing an alternative pathway to a high school diploma via GED preparation. CREA offers both full-day and evening programs at Thomas Edison High School of Technology and Seneca Valley High School. The evening option is offered Monday through Thursday from 5:30 to 8:30 p.m. and the day programs occur during regular school hours. In both programs, students study a career pathway and participate in an ESOL class, math class, and GED preparation class. Students enroll at their home school, but attend all classes with the CREA program.

These courses are open only to ESOL students enrolled in the CREA program and admission must be determined by the CREA program specialist. The courses are offered only at Seneca Valley High School and Thomas Edison High School of Technology. Additional information is at *www.montgomeryschoolsmd.org/curriculum/foundations*.

| CAREER READINESS EDUCATION ACADEMY (CREA) | |
|---|---|
| COURSE TITLE | COURSE CODE |
| CREA ENG 1 and 2 | ESL2051 |
| CREA ENG 3 and 4 | ESL2016 |
| CREA Math 1 and 2 | ESL2052 |
| CREA Math 3 and 4 | ESL2053 |
| CREA GED Preparation | ESL2050 |
| CREA Automotive Topics DP | ESL2054 |
| CREA FoundConstruction DP | ESL2057 |
| CREA Hospitality Tour DP | ESL2058 |
| CREA Restaurant Mgmt DP | ESL2059 |

## • COLLEGE/CAREER RESEARCH AND DEVELOPMENT POS

College/Career Research and Development is a two-year program of study that prepares students with academic, technical, and workplace skills necessary to pursue future education and employment in a career field of their interest, on graduation from high school.

| COLLEGE/CAREER RESEARCH AND DEVELOPMENT POS | | | | | |
|---|---|---|---|---|---|
| **COURSE TITLE** | **POS REQUIREMENTS** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **College/Career Research and Development A/B** | Required Coursework | NSS2035 A/B | 0.5 | | |
| **Career Seminar A/B** | | NSS2034 A/B | 0.5 | | *College/Career Research and Development: A/B*<br>**Corequisite:** *Site-based Work Experience* |
| **Site-Based Work Experience A/B DP** | | WBL2008 A/B | 0.5 | (DP) | *College/Career Research and Development A/B*<br>**Corequisite:** *Concurrent enrollment in College/Career Seminar class is required. Students must successfully complete the seminar class to receive site-based credit.* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/college.aspx.*

## • CAREER EXPERIENCES

Career experiences are additional programmatic options that provide students with experiential learning opportunities related to their future education and chosen career field. ***Note: These course options do not satisfy the POS option for graduation.***

| INTERNSHIP REQUIREMENTS |
|---|
| **DOCUMENTATION** |
| Students may be required by the sponsoring organization to provide appropriate documentation. This may include a social security number and/or proof of citizenship.<br><br>Hours required per semester<br>　　Single-period . . . . . . . . . 0.5 credit . . . . . .75 hours<br>　　Double-period. . . . . . . . . 1.0 credit . . . . . .150 hours<br>　　Triple-period . . . . . . . . . 1.5 credits . . . . .225 hours |

| CAREER EDUCATION EXPERIENCES AND INTERNSHIPS | | | |
|---|---|---|---|
| **COURSE TITLE** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** |
| **Internship, Student A/B** | WBL2004 A/B | 0.5 | |
| **Internship, Student A/B DP** | WBL2005 A/B | 1.0 | |
| **Internship, Student A/B TP** | WBL2006 A/B | 1.5 | |
| **Applied Educational Leadership A/B** | NSS2036 A/B | 0.5 | |
| **Applied Educational Leadership A/B SSL** | NSS2037 A/B | 0.5 | 5 SSL |
| **Life 101** | NSS2025 | 0.5 | |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/internships.aspx.*

# CONSTRUCTION AND DEVELOPMENT PROGRAMS OF STUDY

The Construction and Development Cluster offers two career pathways. A design pathway with the Principles of Architecture and CAD Technology program and the Construction Design and Management program that includes five construction craft programs. The design and construction of a student house project is part of the students' option. The curricula for all of the programs have post-secondary articulation agreements. These programs also are supported by the Montgomery County Students Construction Trades Foundations, Inc. This nonprofit foundation is a cooperative venture of the school system and volunteers from local businesses and professionals within the construction industry.

In partnership with Montgomery College, the Montgomery County Students Construction Trades Foundation, Inc. provides an opportunity for students to enroll in two Construction Management classes CGMT 100 Construction Methods and Materials, and CGMT110, Construction Plan Reading. Both classes are taught at Montgomery College, with students receiving dual-enrollment credit. Enrollment is limited and subject to meeting Montgomery College entrance requirements. Contact the Foundations Office at 240-740-2050 for application information.

## • CARPENTRY POS

The Carpentry program provides students with opportunities to learn about the home-building industry. Participants in this program master a variety of construction skills. Students apply their knowledge and skills by participating in the student-built house project. Students who complete this program are eligible to receive credit at Montgomery College in the Construction Technology program, as well as industry-recognized credentials through the National Center for Construction Education and Research.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • NCCER Construction Core<br>• NCCER Core plus Level 1 Carpentry | • Montgomery College—3–7 credits |

### CARPENTRY—POS OPTION 1
*Offered only at:* Thomas Edison HS of Technology

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Introduction to Carpentry DP | Required semester A 1st Year Coursework | CON2004 | 1.0 | 15 SSL TP | |
| Carpentry 1 A SP | | CON2005A | 0.5 | | |
| Carpentry 1 B TP | Required semester B 1st Year Coursework | CON2006B | 1.5 | | |
| Carpentry 2 A/B TP | Required 2nd Year Coursework | CON2030 A/B | 1.5 | 15 SSL TP | *Carpentry 1 A/B* |
| Dual Enrollment | Additional Opportunities | CON5105 | 1.0 | | *Carpentry 1 A* |
| Internship, Carpentry | Additional Opportunities | CON2036 | 0.5 | | *Carpentry 1 A/B* |

### CARPENTRY—POS OPTION 2
*Offered only at:* Thomas Edison HS of Technology

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Foundations of Building and Construction 1.5 TP | Required 1st Year Coursework | CON2015 A | 1.5 | 15 SSL TP | |
| Carpentry 1 B TP | | CON2006 B | 1.5 | | |
| Carpentry 2 A/B TP | Required 2nd Year Coursework | CON2030 A/B | 1.5 | | *Carpentry 1 A/B* |
| Dual Enrollment | Additional Opportunities | CON5105 | 1.0 | | *Carpentry 1 A* |
| Internship, Carpentry | Additional Opportunities | CON2036 | 0.5 | | *Carpentry 1 A/B* |

### CARPENTRY—POS OPTION 3
*Offered only at:* Seneca Valley High School

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Foundations of Building and Construction A/B | Required Coursework | CON2018 A/B | 0.5 | 5 SSL | |
| Carpentry 1 A/B (SP) | | CON2005 A/B | 0.5 | 5 SSL | |
| Carpentry 2 A/B (DP) | | CON2020 A/B | 1.0 | 10 SSL DP | *Carpentry 1 A/B* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/carpentry.aspx.*

# • CONSTRUCTION ELECTRICITY POS

The Construction Electricity program provides students with opportunities to learn about the residential and commercial building industry. Participants master a variety of electrical skills and develop workplace competencies through authentic experiences. Students apply their knowledge and skills to the student-built house project. Students who complete this program are eligible to receive credit at Montgomery College in the Construction Technology program, as well as industry-recognized credentials through the National Center for Construction Education and Research.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • NCCER Construction Core<br>• NCCER Core plus Level 1 Electrical | • Montgomery College—3–7 credits |

### CONSTRUCTION ELECTRICITY—POS OPTION 1
*Offered only at:* **Thomas Edison HS of Technology**

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Introduction to Electricity (DP) | Required semester A 1st Year Coursework | CON2002 | 1.0 | 15 SSL | |
| Electricity 1 A SP | | CON2003A | 0.5 | | |
| Electricity 1 B TP | Required semester B 1st Year Coursework | CON2045B | 1.5 | | |
| Electricity 2A/ B TP | Required 2nd Year Coursework | CON2025 A/B | 1.5 | 15 SSL TP | *Electricity 1 A/B* |
| Dual Enrollment | Additional Opportunities | CON5105 | 1.0 | | *Electricity 1 A* |
| Internship, Electricity | | CON2038 | 0.5 | | *Electricity 1 A/B* |

### CONSTRUCTION ELECTRICITY—POS OPTION 2
*Offered only at:* **Thomas Edison HS of Technology**

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Foundations of Building and Construction 1.5 TP | Required 1st Year Coursework | CON2015 A | 1.5 | 15 SSL | |
| Electricity 1 B TP | | CON2045 B | 1.5 | | |
| Electricity 2 A/B TP | Required 2nd Year Coursework | CON2025 A/B | 1.5 | 15 SSL TP | *Electricity 1 A/B* |
| Dual Enrollment | Additional Opportunities | CON5105 | 1.0 | CM (AL) | *Electricity 1 A* |
| Internship, Electricity | | CON2038 | 0.5 | | *Electricity 1 A/B* |

### CONSTRUCTION ELECTRICITY—POS OPTION 3
*Offered only at:* **Seneca Valley HS**

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Foundation of Building Construction Technology (SP) | Required Coursework | CON2018 A/B | 0.5 | 5 SSL | |
| Electricity 1 A/B (SP) | | CON2003 A | 0.5 | | |
| Electricity 2 A/B (DP) | | CON2020 A/B | 1.0 | 10 SSL DP | *Electricity 1 A/B* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/electricity.aspx.*

# •PRINCIPLES OF ARCHITECTURE AND CAD TECHNOLOGY POS

The Principles of Architecture and Computer-Assisted Drafting (CAD) Technology is a two-year program that provides an opportunity for students to complete a design pathway. Designing and engineering of physical structures from original concept to complete architectural and engineering plans that include using AutoCAD software are the major elements of the program. Upon graduation, students will be capable of furthering their education in a number of careers in the construction industry that are related to developing, designing, constructing, and maintaining the built environment. Students who complete this program are eligible to receive credit at Montgomery College in the Architectural Technology program.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • Autodesk AutoCAD Certified User and Autodesk Revit Certified User | • Montgomery College—3–7 credits |

| PRINCIPLES OF ARCHITECTURE AND CAD TECHNOLOGY—POS<br>*Offered only at:* Thomas Edison HS of Technology | | | | | |
|---|---|---|---|---|---|
| **COURSE TITLE** | **POS REQUIREMENTS** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **Architectural Drafting Techniques TP** | Required Coursework | CON2042 | 1.5 | TP | |
| **Computer-Assisted Drafting (CAD) Technology: Architectural Applications TP** | | CON2007 | 1.5 | TP | *Architectural Drafting Techniques* |
| **Residential Design Studio TP** | | CON2008 | 1.5 | 15 SSL TP | *Computer-Assisted Drafting (CAD) Technology: Architectural Applications* |
| **Advanced CAD Applications TP** | | CON2009 | 1.5 | TP | *Residential Design Studio* |
| **Dual Enrollment** | Additional Opportunities | ENR5110 | 1.0 | | *Architectural Drafting Techniques* |
| **Internship, Principles of Architecture and CAD Technology** | | CON2037 | 0.5 | | *Computer-Assisted Drafting (CAD) Technology: Architectural Applications* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/architecture.aspx.*

# HEATING AND AIR CONDITIONING POS

The Heating and Air Conditioning program prepares students for the challenges and demands of an exciting and technical career. Students learn a variety of basic and advanced heating, ventilating, and air conditioning (HVAC) principles in a combination of classroom and work-site experiences. An integral part of the instructional program is participation in the student-built house project. Students completing this program are eligible to receive credit at Montgomery College in the Construction Technology program, as well as industry—recognized credentials through the National Center for Construction Education and Research.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • NCCER Construction Core<br>• NCCER Masonry Level 1 | • Montgomery College—3–7 credits |

### HEATING AND AIR CONDITIONING—POS OPTION 1
**Offered only at: Thomas Edison HS of Technology**

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Introduction to HVAC (DP) | Required semester A 1st Year Coursework | CON2000 | 1.0 | 15 SSL TP | |
| Heating, Ventilation, and Air Conditioning 1 A SP | | CON2001 A | 0.5 | | |
| Heating, Ventilation, and Air Conditioning 1 B TP | Required semester B 1st Year Coursework | CON2043 B | 1.5 | | |
| Heating Ventilation, and Air Conditioning 2 A/B TP | Required 2nd Year Coursework | CON2013 A/B | 1.5 | 15 SSL TP | *HVAC 1 A/B* |
| Dual Enrollment | Additional Opportunities | CON5105 | 1.0 | | *HVAC 1 A* |
| Internship, Heating Ventilation, and Air Conditioning | | CON2039 | 0.5 | | *HVAC 1 A/B* |

### HEATING AND AIR CONDITIONING—POS OPTION 2
**Offered only at: Thomas Edison HS of Technology**

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Foundations of Building and Construction TP | Required 1st Year Coursework | CON2015 A | 1.5 | 15 SSL TP | |
| Heating, Ventilation, and Air conditioning 1 B TP | | CON2043 B | 1.5 | | |
| Heating Ventilation, and Air Conditioning 2 A/B TP | Required 2nd Year Coursework | CON2013 A/B | 1.5 | 15 SSL TP | *HVAC 1 A/B* |
| Dual Enrollment | Additional Opportunities | CON5105 | 1.0 | | *HVAC 1 A* |
| Internship, Heating Ventilation, and Air Conditioning | | CON2039 | 0.5 | | *HVAC 1 A/B* |

### HEATING AND AIR CONDITIONING—POS OPTION 3
**Offered only at: Seneca Valley HS**

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Foundation of Building Construction Technology (SP) | Required Coursework | CON2018 A/B | 0.5 | 5 SSL | |
| Heating Ventilation and Air Conditioning 1 A/B (SP) | | CON2001 A/B | 0.5 | 5 SSL | |
| Heating Ventilation and Air Conditioning 2 A/B (DP) | | CON2044 A/B | 1.0 | 10 SSL (DP) | *HVAC 1 A/B* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/hvac.aspx*.

## • MASONRY POS

The Masonry program provides opportunities for students to learn a variety of skills related to brick and block construction. Students gain practical work experience by participating in the student-built house project. By completing this program, students are eligible to receive credit at Montgomery College in the Construction Technology program, as well as industry-recognized credentials through the National Center for Construction Education and Research. An approved apprenticeship program, on-the-job training, and/or a career as a brick mason also are options for students who complete this program.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • NCCER Construction Core<br>• NCCER Masonry Level 1 | • Montgomery College—3–7 credits |

### MASONRY—POS OPTION 1
**Offered only at:** Thomas Edison HS of Technology

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| **Introduction to Masonry (DP)** | Required semester A 1st Year Coursework | CON2034 | 1.0 | 15 SSL TP | |
| **Masonry 1 A SP** | | CON2035 A | 0.5 | | |
| **Masonry 1 B TP** | Required semester B 1st Year Coursework | CON2035 B | 1.5 | | |
| **Masonry 2 A/B TP** | Required 2nd Year Coursework | CON2017 A/B | 1.5 | | *Masonry 1 A/B* |
| **Dual Enrollment** | Additional Opportunities | CON5105 | 1.0 | | *Masonry 1 A* |
| **Internship, Masonry** | | CON2040 | 0.5 | | *Masonry 1 A/B* |

### MASONRY—POS OPTION 2
**Offered only at:** Thomas Edison HS of Technology

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| **Foundations of Building and Construction TP** | Required 1st Year Coursework | CON2015 A | 1.5 | 15 SSL TP | |
| **Masonry 1 B TP** | | CON2035 B | 1.5 | | |
| **Masonry 2 A/B TP** | Required 2nd Year Coursework | CON2017 A/B | 1.5 | | *Masonry 1 A/B* |
| **Dual Enrollment** | Additional Opportunities | CON5105 | 1.0 | | *Masonry 1 A* |
| **Internship, Masonry** | | CON2040 | 0.5 | | *Masonry 1 A/B* |

### MASONRY—POS OPTION 3
**Offered only at:** Seneca Valley HS

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| **Foundation of Building Construction Technology (SP)** | Required Coursework | CON2018 A/B | 0.5 | 5 SSL | |
| **Masonry 1 A/B (SP)** | | CON2035 A<br>CON2046 B | 0.5 | 5 SSL | |
| **Masonry 2 A/B (DP)** | | CON2047 A/B | 1.0 | 10 SSL DP | *Masonry 1 A/B* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/masonry.aspx.*

# • PLUMBING POS

The plumbing program provides students with opportunities to learn the installation, maintenance, and repair of many different types of pipe systems. Plumbers install and repair the water, waste disposal, drainage, and gas systems in homes and commercial and industrial buildings. Students apply their knowledge and skills in the construction of a student-built house project. By completing this program, students are eligible to receive credit at Montgomery College in the Construction Technology program, as well as industry-recognized credentials through the National Center for Construction Education and Research.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • NCCER Construction Core<br>• NCCER Plumbing Level 1 | • Montgomery College—3–7 credits |

## PLUMBING—POS OPTION 1
### Offered only at: Thomas Edison HS of Technology

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Introduction to Plumbing (DP) | Required semester A 1st Year Coursework | CON2026 | 1.0 | 15 SSL TP | |
| Plumbing 1 A SP | | CON2027 A | 0.5 | | |
| Plumbing 1 B TP | Required semester B 1st Year Coursework | CON2027 B | 1.5 | | |
| Plumbing 2 A/B TP | Required 2nd Year Coursework | CON2029 A/B | 1.5 | | *Plumbing 1 A/B* |
| Dual Enrollment | Additional Opportunities | CON5105 | 1.0 | | *Plumbing 1 A* |
| Internship, Plumbing | | CON2041 | 0.5 | | *Plumbing 1 A/B* |

## PLUMBING—POS OPTION 2
### Offered only at: Thomas Edison HS of Technology

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Foundations of Building and Construction TP | Required 1st Year Coursework | CON2015 A | 1.5 | 15 SSL TP | |
| Plumbing 1 B TP | | CON2027 B | 1.5 | | |
| Plumbing 2 A/B TP | Required 2nd Year Coursework | CON2029 A/B | 1.5 | | *Plumbing 1 A/B* |
| Dual Enrollment | Additional Opportunities | CON5105 | 1.0 | | *Plumbing 1 A* |
| Internship, Plumbing | | CON2041 | 0.5 | | *Plumbing 1 A/B* |

## PLUMBING—POS OPTION 3
### Offered only at: Seneca Valley HS

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Foundation of Building Construction Technology (SP) | Required Coursework | CON2018 A/B | 0.5 | 5 SSL | |
| Plumbing 1 A/B (SP) | | CON2027 A<br>CON2048 B | 0.5 | 5 SSL | |
| Plumbing 2 A/B (DP) | | CON2049 A/B | 1.0 | 10 SSL | *Plumbing 1 A/B* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/plumbing.aspx*.

# • CONSTRUCTION DESIGN AND MANAGEMENT POS

A four-course, project-based CTE Program of Study. Project-based learning (PBL) is a dynamic classroom teaching method in which students actively explore real-world problems and challenges to acquire a deeper knowledge about the subject matter. Students gain knowledge and skills by completing and revising projects that address complex questions, problems, or challenges. The instructor doubles as a facilitator, working with students to frame worthwhile questions, structuring meaningful tasks, coaching both knowledge development and social skills, and carefully assessing what students have learned from the experience. PBL also creates opportunities for groups of students to collectively gather information and think critically, thus developing essential collaboration skills required in the workplace.

Students will develop an understanding of the built world through the design and construction process. Each course uses the project-based learning approach to advance students' understanding of the design-build-maintain process. Advanced architectural drafting and design skills are developed through lab-based instruction using Autodesk software tools (AutoCAD and Revit Architecture). Throughout the program, students will develop a portfolio to demonstrate knowledge of each phase of the design and construction management process. Students will also have the opportunity to earn industry certification in AutoCAD and/or Revit.

| Industry Certifications that Students May Earn |
|---|
| • Autodesk AutoCAD Certified User<br>• Autodesk Revit Certified User |

| CONSTRUCTION DESIGN AND MANAGEMENT<br>*Offered only at:* Seneca Valley HS | | | | | |
|---|---|---|---|---|---|
| **COURSE TITLE** | **POS REQUIREMENTS** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **Introduction to Construction Design and Management A/B** | Required Coursework | CON2050 A/B | 0.5 | | |
| **Principles of Construction Design A/B** | | CON2051 A/B | 0.5 | | *Introduction to Construction Design and Management A/B* |
| **Advanced Design and 3D Modeling A/B** | | ENR2036 A/B | 0.5 | CM (AL) | *Principles of Construction Design A/B* |
| **Advanced Construction Management A/B** | | CON2052 A/B | 0.5 | CM (AL) | *Advanced Design and 3D Modeling A/B* |
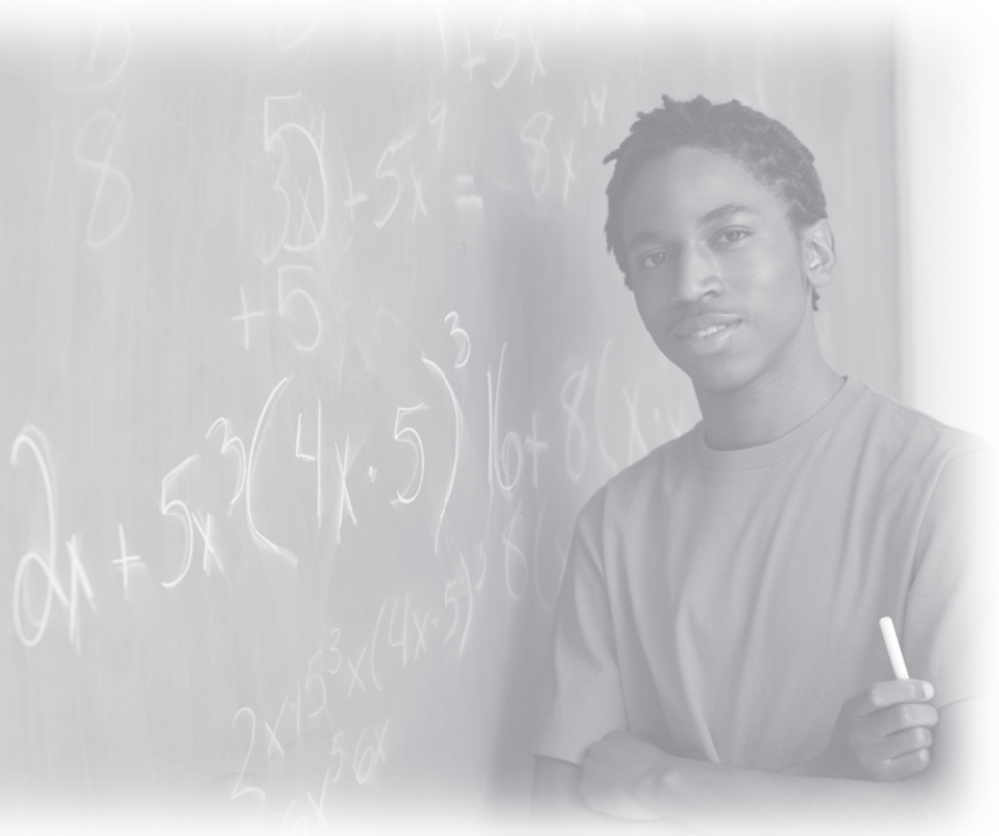
# PROGRAMS OF STUDY IN CONSUMER SERVICES, HOSPITALITY, AND TOURISM

## ● COSMETOLOGY POS

Cosmetology is the art and science of care of the hair, skin and nails. This is a three-year program that requires 1,500 hours of instruction and prepares the student to take the Maryland State Board of Cosmetology examination for a cosmetologist license.

| Industry Certifications that Students May Earn |
|---|
| • Maryland State Cosmetologist License |

| COSMETOLOGY—POS *Offered only at:* Gaithersburg HS, Thomas Edison HS of Technology | | | | | |
|---|---|---|---|---|---|
| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
| Cosmetology 1 A/B TP | Required Coursework | EDU2016 A/B | 1.5 | 15 SSL TP | |
| Cosmetology 2 A/B TP | | EDU2018 A/B | 1.5 | 15 SSL TP | *Cosmetology 1A and B* |
| Cosmetology 3 A/B TP | | EDU2017 A/B | 1.5 | 15 SSL TP | *Cosmetology 2A and B* |

## ● HOSPITALITY AND TOURISM MANAGEMENT PROGRAM (HTMP) POS

The Hospitality and Tourism Management Program is a nationally recognized program developed by industry experts and members of the American Hotel & Lodging Association that offers the Certified Hospitality and Tourism Management Professional credential. Students enrolled in the program build business and management skills related to the lodging and tourism industry. *Course fees may apply.*

| Industry Certifications that Students May Earn |
|---|
| • Certified Hospitality Tourism Management Professional (CHTMP) certification<br>• ServSafe |

| HOSPITALITY AND TOURISM MANAGEMENT PROGRAM (HTMP)—POS *Offered only at:* Seneca Valley HS, Walter Johnson HS, Watkins Mill HS, Thomas Edison HS of Technology | | | | | |
|---|---|---|---|---|---|
| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
| Principles of Hospitality and Tourism A/B | Required Coursework | CHT2017 A/B | 0.5 | 5 SSL | |
| Hospitality and Tourism Management A/B | | CHT2018 A/B | 0.5 | 5 SSL | *Marketing Hospitality A and B* |
| Internship , Hospitality and Tourism Management | | CHT2005 | 0.5 | CM (AL) | *Hospitality and Tourism Management A and B* |

# HOSPITALITY MANAGEMENT POS

The Hospitality Management program offers students opportunities to pursue interests and gain proficiency in all aspects of the food industry, preparing them for a variety of career options. The need for dietary consultants, food scientists, nutritionists, chefs, food service managers, and educators continues to expand. Nutrition, food safety, and sanitation are emphasized as students practice all aspects of meal planning and preparation. ProStart™ outcomes have been infused into the curriculum, providing students with authentic work-based skills. Students have opportunities to take the ServSafe and ProStart™ examinations for certification. *Course fees may apply.*

| Industry Certifications that Students May Earn |
| --- |
| • ServSafe<br>• National ProStart Certificate of Achievement |

| HOSPITALITY MANAGEMENT—POS<br>***Offered only at:*** **Albert Einstein HS, Gaithersburg HS, Col. Zadok Magruder HS, Rockville HS, Sherwood HS, Springbrook HS, Watkins Mill HS** | | | | | |
| --- | --- | --- | --- | --- | --- |
| **COURSE TITLE** | **POS REQUIREMENTS** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **International Cultures and Cuisines A/B** | Required Coursework | CHT2000 A/B | 0.5 | 5 SSL | *International Cultures and Cuisines A before B* |
| **Culinary Essentials A/B** | | CHT2004 A/B | 0.5 | | *International Cultures and Cuisines A and B*<br>*Culinary Essentials A before B* |
| **Internship, Human and Consumer Services, Hospitality and Tourism** (repeatable, a minimum of 2.0 credits required) | | CHT2001 | 0.5 | | *Culinary Essentials A and B* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/hospitality-management.aspx.*

# • PROFESSIONAL RESTAURANT MANAGEMENT POS

The Professional Restaurant Management program provides students with the opportunity to explore many career opportunities available in the food-service industry. Students develop skills for employment based on industry standards. Students learn safety and sanitation principles, professional food-handling techniques, and quantity preparation through the use of commercial equipment and systems technology. Nutrition, menu planning, food cost control, and workplace skills are emphasized throughout the program. The American Culinary Federation (ACF) has certified this program and ACF outcomes have been infused into the curriculum, providing industry-based experiences. Students have opportunities to take the ServSafe exam and the National Occupational Competency Testing Institute examinations for certification. *Course fees may apply.*

| Industry Certifications that Students May Earn |
| --- |
| • Certified Fundamentals Cook (CFC) certification |
| • ServSafe |

### PROFESSIONAL RESTAURANT MANAGEMENT—POS—DOUBLE PERIOD OPTION
*Offered only at:* **Damascus HS, Paint Branch HS**

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
| --- | --- | --- | --- | --- | --- |
| **Professional Restaurant Management DP 1 A/B** | Required Coursework | CHT2003 A/B | 1.0 | 10 SSL DP | *Professional Restaurant Management DP 1A before B* |
| **Professional Restaurant Management DP 2 A/B** | | CHT2009 A/B | 1.0 | 10 SSL DP | *Professional Restaurant Management DP 1 A/B* *Professional Restaurant Management DP 2A before B* |

### PROFESSIONAL RESTAURANT MANAGEMENT—POS—TRIPLE PERIOD OPTION
*Offered only at:* **Thomas Edison HS of Technology**

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
| --- | --- | --- | --- | --- | --- |
| **Professional Restaurant Management TP 1 A/B** | Required Coursework | CHT2007 A/B | 1.5 | 15 SSL DP | *Professional Restaurant Management 1A before B* |
| **Professional Restaurant Management TP 2 A/B** | | CHT2008 A/B | 1.5 | 15 SSL DP | *Professional Restaurant Management TP 1 A/B* *Professional Restaurant Management TP 2A before B* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/restaurant-management.aspx.*

### CAREER-BASED ELECTIVES

| COURSE TITLE | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
| --- | --- | --- | --- | --- |
| **Food Trends and Technology A/B** | CHT2010 A/B | 0.5 | CM | *Food Trends and Technology A before B* |
| **Child and Adolescent Development A/B** (without Preschool lab) | EDU2008 A/B | 0.5 | | |
| **Professional Restaurant Management 1 A/B** | CHT2002 A/B | 0.5 | 5 SSL | |
| **Professional Restaurant Management 2 A/B** | CHT2006 A/B | 0.5 | 5 SSL | *Professional Restaurant Management 1 A/B* |

# PROGRAM OF STUDY EDUCATION TRAINING AND CHILD STUDIES

## • EARLY CHILD DEVELOPMENT POS

Students in the Early Child Development program work with children in a variety of settings and study child development from birth through adolescent stages. Knowledge of physical, intellectual, language, and social and emotional development is applied through planning sessions, teaching, observing, and studying 3- and 4-year-olds in the child development laboratory. Students develop competence in creative teaching techniques.

**The Early Child Development Program is only open as a CTE completer program to those students who are currently enrolled as of school year 2020–2021.**

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • 90 + 9 Clock Hours Certificate | • Up to 9 credits at Montgomery College |

### EARLY CHILD DEVELOPMENT—POS (SINGLE PERIOD)
*Offered only at:* **Bethesda-Chevy Chase HS, Clarksburg HS, Col. Zadok Magruder HS, Damascus HS, Gaithersburg HS, James Blake HS, Northwood HS, Northwest HS, Montgomery Blair HS, Paint Branch HS, Quince Orchard HS, Rockville HS, Seneca Valley HS, Sherwood HS, Springbrook HS, Thomas Wootton HS, Walt Whitman HS, Walter Johnson HS, Watkins Mill HS, Wheaton HS**

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| **Child and Adolescent Development 1 A/B** | Required Coursework | EDU2004 A/B | 0.5 | 5 SSL | |
| **Child and Adolescent Development 2 A/B** | | EDU2011 A/B | 0.5 | CM (AL) 5 SSL | *Child and Adolescent Development 1 A/B* |
| **Advanced-level Education, Training, and Child Studies Internship** (repeatable, a minimum of 1.0 credit required) | | EDU2013 | 0.5 | CM (AL) 5 SSL | *Child and Adolescent Development 1 A/B and Child and Adolescent Development 2 A/B* |
| **Guided Research—Education, Training, and Child Studies A/B** | *Capstone Options | EDU2027 A/B | 0.5 | CM AL | *Advanced-level Education, Training, and Child Studies Internship* |
| **Dual Enrollment** | | EDU5109 | 1.0 | CE | |

### EARLY CHILD DEVELOPMENT—POS (DOUBLE PERIOD)

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| **Child and Adolescent Development 1 A/B DP** | Required Coursework | EDU2005 A/B | 1.0 | 10 SSL (DP) | |
| **Child and Adolescent Development 2 A/B DP** | | EDU2006 A/B | 1.0 | CM 10 SSL (DP) | *Child and Adolescent Development 1 A/B DP* |

# CHILD DEVELOPMENT ASSOCIATE PRESCHOOL PROGRAM POS

This program prepares students for further education and careers in early childhood education and care. The program consists of four high school courses that focus on child growth and development, preschool learning environment, establishing a purposeful preschool childcare program and internship experiences. Program completers will be prepared to take the Child Development Associate (CDA) exam, ready for a verification visit conducted by an employee of the Council of Professional Recognition and possess a complete CDA professional portfolio.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • Child Development Associate Credential | • 6 Credits at Anne Arundel Community College |

| CHILD DEVELOPMENT ASSOCIATE PRESCHOOL PROGRAM POS<br>*Offered only at: Clarksburg HS, Gaithersburg HS, Northwest HS, Northwood HS, Quince Orchard HS, Rockville HS, Seneca Valley HS, Sherwood HS, Walt Whitman HS, Watkins Mill HS* | | | | | |
|---|---|---|---|---|---|
| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
| Child Growth and Development A/B | Required Coursework | EDU 2029 A/B | 0.5 | | *Child Growth and Development A* |
| Learning Environment for Preschoolers A/B | | EDU 2031 A/B | 0.5 | AL | *Child Growth and Development A/B* |
| Establishing a Purposeful Program for Preschoolers A/B | | EDU 2030 A/B | 0.5 | AL | *Learning Environment for Preschoolers A/B* |
| Child Development Associate Internship | | EDU 2028 | 0.5 | AL Repeatable for Credit | *Establishing a Purposeful Program for Preschoolers A/B* |

# TEACHER ACADEMY OF MARYLAND POS

The Teacher Academy of Maryland is an instructional program that aligns with the Interstate Teacher Assessment and Support Consortium (InTASC) and the Maryland Essential Dimensions of Teaching (EdoTs). The program prepares students for further education and careers in the education profession. The program consists of four required courses that focus on teaching as a profession, human growth and development, learning theory, and curriculum and instruction. The required course credits earned in this program are designed to articulate to a Maryland post—secondary teacher education program. This program is based on the outcomes of the Maryland Associate of Arts in Teaching (A.A.T.) degree, which aligns with the National Council for the Accreditation of Teacher Education (NCATE) standards.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • ParaPro<br>• PraxisCORE | • Bowie State University – 3 credits<br>• Coppin State University – 3 credits<br>• Frostburg State University – 6 credits<br>• Hood College – 3<br>• Morgan State University – 3 credits<br>• Notre Dame of Maryland University – 9 credits<br>• St. Mary's College of Maryland – 4 credits<br>• Salisbury University – 3 credits<br>• Stevenson University – 6 credits<br>• Towson University – 3 credits |

| TEACHER ACADEMY OF MARYLAND—POS<br>*Offered only at:* Albert Einstein HS and John F. Kennedy HS | | | | | |
|---|---|---|---|---|---|
| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
| Human Growth and Development Through Adolescence A/B | Required Coursework | EDU 2000 A/B | 0.5 | | |
| Teaching as a Profession A/B | | EDU 2010 A/B | 0.5 | AL | *Human Growth and Development through Adolescence A/B* |
| Foundations of Curriculum and Instruction A/B | | EDU 2009 A/B | 0.5 | AL | *Teaching as a Profession A/B* |
| Internship TAM | | EDU 2014 | 0.5 | CM (AL) | *Foundations of Curriculum and Instruction A/B* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/arts-in-teaching.aspx.*

# PROGRAM OF STUDY IN ENVIRONMENTAL AGRICULTURE, AND NATURAL RESOURCES

## NEW! • CERTIFIED PROFESSIONAL HORTICULTURIST (CPH) POS

The Certified Professional Horticulturist (CPH) industry exam is used by the Maryland "Green Industry." Students complete a sequence of courses, which include Foundations of Horticulture, Plant Production, and Landscape Design and Management. Students have the opportunity to earn the student-level CPH certification by taking and passing the industry exam.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • Certified Professional Horticulturist (CPH) | • Montgomery College—3 credits |

| CERTIFIED PROFESSIONAL HORTICULTURIST (CPH)—POS *Offered only at:* Damascus HS, Sherwood HS | | | | | |
|---|---|---|---|---|---|
| **COURSE TITLE** | **POS REQUIREMENTS** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **Foundations of Horticulture A/B** | Required Coursework | AGB2007 A/B | 0.5 | | |
| **Plant Production A/B** | | AGB2002 A/B | 0.5 | (AL) | *Foundation of Horticulture A/B* |
| **Landscape Design and Management A/B** | | AGB2008 A/B | 0.5 | (AL) | *Plant Production A/B* |
| **Internship, Horticulture** (minimum of 1 credit) | *Capstone Options | AGB2010 | 0.5 | | *Landscape Design and Management A/B* |
| **Guided Research—Environmental, Agricultural, and Natural Resources A/B** | | AGB2001 A/B | 0.5 | | |
| **Dual Enrollment Course Option Adv Science** | | SCI5081 | 1.0 | CM (AL) | |

*Select one (1 credit, A/B) of the capstone options to complete the program.*

More information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/horticulture.aspx.*

# CURRICULUM FOR AGRICULTURAL SCIENCE EDUCATION (CASE) POS

The Curriculum for Agricultural Science Education (CASE) Program of Study (POS) prepares students to be successful in numerous careers in the agricultural sciences as well as preparing them to further their education at the post-secondary level. This inquiry-based POS incorporates internal and external classroom experiences, and internship opportunities.

CASE provides the foundation for postsecondary education in any agricultural field, including Animal Science, Plant Science, Natural Resource Management, Environmental Science, and Food Science.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • College Credit | • University of Maryland (Institute of Applied Agriculture) 3 credits |

| CURRICULUM FOR AGRICULTURAL SCIENCE EDUCATION (CASE) POS *Offered only at:* Northwood HS and Sherwood HS | | | | | |
|---|---|---|---|---|---|
| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
| **Agriculture, Food, and Natural Resources (AFNR) A/B** | Required Coursework | AGB2015 A/B | 0.5 | | |
| **Principles of Agricultural Science—Natural Resources and Ecology (NRE) A/B** | | TBA | 0.5 | | *Agriculture, Food and Natural Resources A/B* |
| **Environmental Science Issues A/B** | | TBA | 0.5 | | *Principles of Agricultural Science-Natural Resources and Ecology (NRE) A/B* |
| **Internship** (minimum of 1 credit) | *Capstone Options | TBA | 0.5 | | *Environmental Science Issues A/B* |
| **Guided Research—Environmental, Agricultural, and Natural Resources A/B** | | TBA | 0.5 | | |
| **Dual Enrollment Course Option** | | TBA | 1.0 | CM (AL) | |

*Select one (1 credit, A/B) of the capstone options to complete the program.

# PROGRAM OF STUDY IN HEALTH AND BIOSCIENCES

## • HEALTHCARE PROFESSIONS POS

The Academy of Health Professions uses project and problem-based learning, clinical experiences, and classroom and lab instruction to teach students about the high-demand field of health care. Students are introduced to basic health-care knowledge and skills through two foundation courses: Foundation of Medicine and Health Science and Structures and Functions of the Human Body. Opportunities for students to apply foundational course knowledge to real-life health-care situations are offered through specialized course options such as Fundamentals of Pharmacy, Physical Rehabilitation Science, and Certified Nursing Assistant with Clinical Applications. Students will have the opportunity to earn state and/or nationally recognized certifications and/ or college credit through articulation agreements with local colleges. Students may choose from several options for program completion. These may include enrollment in a postsecondary institution or internship. Students are strongly encouraged to complete four years of science. At a minimum, students should take biology and chemistry while enrolled in the program.

| Healthcare Professions Pathway | Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|---|
| • Certified Nursing Assistant | • Certified Nursing Assistant | • Stevenson University—4 credits |
| • Pharmacy Technician | • Certified Pharmacy Technician (CPhT) | • Stevenson University—4 credits |
| • Physical Rehabilitation | • Personal Trainer Certification | • Stevenson University—4 credits |
| • Certified Clinical Medial Assistant | • Certified Clinical Medical Assistant (CCMA) | • Stevenson University—4 credits |
| • Allied Internship | | • Stevenson University—4 credits |
| • Dual Enrollment | | • Stevenson University—4 credits |

### HEALTHCARE PROFESSIONS CERTIFIED NURSING ASSISTANT OPTION
*Offered only at:* Thomas A. Edison HS of Technology, John F. Kennedy HS, Paint Branch HS, Sherwood HS, Watkins Mill HS

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Foundations of Medicine and Health Science A/B | Required Coursework | BHP2015 A/B | 0.5 | | |
| Structures and Functions of the Human Body A/B | | BHP2014 A/B | 0.5 | CM (AL) | *Foundations of Medicine and Health Science A/B* |
| AHP Specialty CNA A/B DP | | BHP2010 A/B | 0.5 | (AL) (DP) | *Foundations of Medicine and Health Science A/B and Structures and Functions of the Human Body A/B* |

### HEALTHCARE PROFESSIONS PHARMACY TECHNICIAN OPTION
*Offered only at:* Clarksburg HS, Col. Zadok Magruder HS

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Foundations of Medicine and Health Science A/B | Required Coursework | BHP2015 A/B | 0.5 | | |
| Structures and Functions of the Human Body A/B | | BHP2014 A/B | 0.5 | CM (AL) | *Foundations of Medicine and Health Science A/B* |
| Fundamentals of Pharmacy A/B | | BHP2001 A/B | 0.5 | CM (AL) | *Foundations of Medicine and Health Science A/B and Structures and Functions of the Human Body A/B* |
| Allied Health Internship A/B | *Capstone Options | BHP2011 A/B | 0.5 | CM (AL) | *Foundations of Medicine and Health Science A/B and Structures and Functions of the Human Body A/B* |
| Dual Enrollment Course Option | | BHP5123 | 0.5 | CM (AL) | *All required coursework for the pathway option* |

## HEALTHCARE PROFESSIONS PHYSICAL REHABILITATION SCIENCE OPTION
### Offered only at: Clarksburg HS, John F. Kennedy HS

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Foundations of Medicine and Health Science A/B | Required Coursework | BHP2015 A/B | 0.5 | | |
| Structures and Functions of the Human Body A/B | | BHP2014 A/B | 0.5 | CM (AL) | *Foundations of Medicine and Health Science A/B* |
| Physical Rehabilitation Science A/B | | BHP2009 A/B | 0.5 | CM (AL) | *Foundations of Medicine and Health Science A/B and Structures and Functions of the Human Body A/B* |
| Allied Health Internship A/B | *Capstone Options | BHP2011 A/B | 0.5 | CM (AL) | *Foundations of Medicine and Health Science A/B and Structures and Functions of the Human Body A/B* |
| Dual Enrollment Course Option Adv Science | | BHP5123 | 1.0 | CM (AL) | *All required coursework for the pathway option* |

## HEALTHCARE PROFESSIONS CERTIFIED CLINICAL MEDICAL ASSISTANT OPTION
### Offered only at: Seneca Valley HS, Thomas Edison High School of Technology, Paint Branch HS, John F. Kennedy HS

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Foundations of Medicine and Health Science A/B | Required Coursework | BHP2015 A/B | 0.5 | | |
| Structures and Functions of the Human Body A/B | | BHP2014 A/B | 0.5 | CM (AL) | *Foundations of Medicine and Health Science A/B* |
| Certified Clinical Medical Assistant | | BHP2019 A/B | 0.5 | CM | *Foundations of Medicine and Health Science A/B and Structures and Functions of the Human Body A/B* |
| Allied Health Internship A/B | *Capstone Options  Choose 1 (for 1.0 credit) | BHP2011 A/B | 0.5 | CM (AL) | *Foundations of Medicine and Health Science A/B and Structures and Functions of the Human Body A/B* |
| Dual Enrollment Course Option Adv Science | | BHP5123 | 1.0 | CM (AL) | *All required coursework for the pathway option* |

## HEALTHCARE PROFESSIONS ALLIED HEALTH INTERNSHIP OPTION
### Offered only at: Clarksburg HS, Col. Zadok Magruder HS, John F. Kennedy HS, Paint Branch HS, Seneca Valley HS, Sherwood HS, Thomas Edison High School of Technology, Watkins Mill HS

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| Foundations of Medicine and Health Science A/B | Required Coursework | BHP2015 A/B | 0.5 | | |
| Structures and Functions of the Human Body A/B | | BHP2014 A/B | 0.5 | CM (AL) | *Foundations of Medicine and Health Science A/B* |
| Allied Health Internship A/B | | BHP2011 A/B | 0.5 | CM (AL) | *Foundations of Medicine and Health Science A/B and Structures and Functions of the Human Body A/B* |
| Allied Health Internship A/B | | BHP2011 A/B | 1.0 | CM (AL) | |

## HEALTHCARE PROFESSIONS DUAL ENROLLMENT OPTION

**Offered only at:** Clarksburg HS, Col. Zadok Magruder HS, John F. Kennedy HS, Paint Branch HS, Seneca Valley HS, Sherwood HS, Thomas Edison High School of Technology, Watkins Mill HS

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| **Foundations of Medicine and Health Science A/B** | Required Coursework | BHP2015 A/B | 0.5 | | |
| **Structures and Functions of the Human Body A/B** | | BHP2014 A/B | 0.5 | CM (AL) | *Foundations of Medicine and Health Science A/B* |
| **Dual Enrollment Course Option Adv Science** | | BHP5123 | 0.5 | CM (AL) | *All required coursework for the pathway option* |
| **Dual Enrollment Course Option Adv Science** | | BHP5123 | 1.0 | CM (AL) | |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/health.aspx*.

## • BIOMEDICAL SCIENCES, PROJECT LEAD THE WAY (PLTW) POS

In the Project Lead the Way Biomedical Sciences program, students examine the processes, structures, and interactions of the human body and step into the roles of biomedical professions, exploring and offering solutions to real-life medical challenges. PLTW Biomedical sciences students use the tools used by professionals in hospitals and labs. Course content includes physiology, genetics, microbiology, public health, and the social, legal, and ethical issues surrounding technological advances related to biomedical science. This program prepares students to take advantage of the high demand career opportunities available in health care and science, equipping them with the knowledge and skills necessary to succeed in postsecondary biomedical sciences and the workforce. Students who successfully complete the full program and earn the required score on end-of-course assessments are eligible for college credit through Stevenson University. Students who pass the national certification exam will be credentialed as a biotechnician assistant.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • Biotechnician Technician Assistant Certification | • Stevenson University – Students scoring 7 or higher on each examination may earn transcripted credits |

| BIOMEDICAL SCIENCES PROJECT LEAD THE WAY (PLTW)—POS *Offered only at:* Damascus HS, Sherwood HS | | | | | |
|---|---|---|---|---|---|
| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
| **Principles of Biomedical Science A/B** | Required Coursework | BHP2007 A/B | 0.5 | | |
| **Human Body Systems A/B** | | BHP2000 A/B | 0.5 | CM (AL) | *Principles of Biomedical Science A/B* |
| **Medical Interventions A/B** | | BHP2016 A/B | 0.5 | CM (AL) | *Human Body Systems A/B* |
| **Biomedical Innovation A/B** | | BHP2008 A/B | 0.5 | CM (AL) | *Medical Interventions A/B* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/biomedical.aspx*.

# • BIOTECHNOLOGY POS

Students in the biotechnology program apply biochemistry, genetics, and molecular biology concepts and skills as they investigate scientific problems related to protein/DNA science. This program provides a unique opportunity for students to develop and refine laboratory and research skills, utilizing the latest lab equipment and computer technologies used by professionals in the field. Laboratory experiences include plant and animal tissue culture, microbiology, polymerase chain reaction techniques, biochemical environmental evaluation, and the latest techniques of recombinant DNA technology. This program prepares students to take advantage of the high demand career opportunities available in health care and science, equipping them with the knowledge and skills necessary to succeed in postsecondary biotechnology and the workforce. Students who pass the national certification exam will be credentialed as a biotechnician assistant.

| Industry Certifications that Students May Earn |
| --- |
| • Biotechnician Technician Assistant Certification |

| BIOTECHNOLOGY—POS *Offered only at:* Gaithersburg HS, Rockville HS, Wheaton HS | | | | | |
| --- | --- | --- | --- | --- | --- |
| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES/COREQUISITES |
| **Biotechnology, Molecular A/B DP** | Required Coursework | BHP2002 A/B | 1.0 | CM (AL) (DP) | *Biology A/B or Chemistry A/B* **Corequisite:** *Chemistry A/B or Biology A/B with Biotechnology* |
| **Biotechnology, Special Topics A/B** | | BHP2004 A/B | 0.5 | CM (AL) | *Molecular Biotechnology DP A/B, Biology A/B or Chemistry A/B* |
| **Guided Research in Biosciences A/B** | *Capstone Options (require 2.0 credits for completion)* | BHP2005 A/B | 0.5 | CM (AL) | *Molecular Biotechnology DP A/B* **Corequisite:** *Special Topics in Biotechnology A/B* |
| **Internship, Biosciences** (need 1 credit for completion) | | BHP2003 | 0.5 | CM (AL) | *Molecular Biotechnology DP A/B* **Corequisite:** *Special Topics in Biotechnology A/B* |
| **Dual Enrollment Course Option Adv Biotechnology** | | BHP5101 | 0.5 | CM (AL) | *Molecular Biotechnology DP A/B* **Corequisite:** *Special Topics in Biotechnology A/B* |

*\*Select one (1 credit, A/B) of the capstone options to complete the program.*

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/biotechnology.aspx*.

# PROGRAMS OF STUDY IN INFORMATION TECHNOLOGY AND CYBERSECURITY

Information Technology and Cybersecurity programs of study offer a broad range of career-related computer science, networking, cybersecurity, and industry certification options. Dual enrollment and articulated college credits may be earned through successful completion of the programs.

## • IT NETWORKING ACADEMY (CISCO)*

The CISCO networking POS provides a comprehensive foundation of microcomputer and network technologies in preparation for earning international industry credentials. Hands-on laboratory experiences train students as entry-level technicians in the field of IT, and for advanced studies in engineering and IT in colleges, universities, and the military. Articulated college credits may be earned through successful completion of the program.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • Students are required to pass one or more of the following:<br><br>» CompTIA ITF,   » CompTIA Security+,<br>» CompTIA A+,   » LP Linux Essentials,<br>» CompTIA Network+,   » CompTIA Linux+,<br>» Cisco CCT,   » Cisco CCNA Cyber Ops,<br>» Cisco CCNA Routing and   » CompTIA PenTest+<br>   Switching   » NAFTrack Certification<br>» Cisco CCNA Security, | • Cisco Academy programs may articulate credit in related Cisco programs through specific articulation agreements by institution—Anne Arundel CC, Baltimore City CC, Chesapeake CC, CCBC–Catonsville, Harford CC, Howard CC, Montgomery College, and Prince George's CC |

*Changes to this POS are expected in 2021, after the publication of this bulletin. Please check the MCPS website, the Foundations office, or contact the associated schools for more information.

### IT NETWORKING ACADEMY (CISCO)–CCNA
**Offered only at:** Bethesda-Chevy Chase HS, Damascus HS, Gaithersburg HS, Quince Orchard HS, Springbrook HS, Thomas S. Wootton HS

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| CCNA I Introduction to Networks A/B | Required Coursework | ITC2042 A/B | 0.5 | CM (AL) | |
| CCNA II-Routing and Switching Essentials A/B | | ITC2033 A/B | 0.5 | CM (AL) | *CCNA I Introduction to Networks A/B* |
| CCNA III –Scaling Networks A/B | | ITC2045 A/B | 0.5 | CM (AL) | *Routing and Switching Essentials A/B* |
| CCNA IV Connecting Networks A/B | | ITC2046 A/B | 0.5 | CM (AL) | *CCNA III –Scaling Networks A/B* |

### IT NETWORKING ACADEMY (CISCO)–CCENT—CHANGES EXPECTED FALL 2021
**Offered only at:** Bethesda-Chevy Chase HS, Damascus HS, Gaithersburg HS, Quince Orchard HS, Springbrook HS, Thomas S. Wootton HS

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| IT Essentials A/B | Required Coursework | ITC2035 A/B | 0.5 | CM | |
| NDG Linux Essentials A/B | | ITC2041 A/B | 0.5 | CM | *IT Essentials A/B* |
| CCNA I Introduction to Networks A/B | | ITC2042 A/B | 0.5 | CM (AL) | *IT Essentials A/B* |
| CCNA II-Routing and Switching Essentials A/B | | ITC2033 A/B | 0.5 | CM (AL) | *CCNA I Introduction to Networks A/B* |

### IT NETWORKING ACADEMY (AOIT) POS
**Offered only at:** Damascus HS, Gaithersburg HS, Springbrook HS, Thomas S. Wootton HS

| For the IT Networking Academy, students must complete the CCENT or the CCNA CISCO pathways to be a program completer. Students may also pursue their interest in the academy by completing the options below. | | | | | |
|---|---|---|---|---|---|
| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
| Internship, Information Technology | Additional Opportunities | ITC2008 | 0.5 | CM (AL) | *CCNA I Introduction to Networks A/B* |
| Dual Enrollment | | ITC5104 | 1.0 | CM (AL) | *CCNA I Introduction to Networks A/B* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/computer-science.aspx.*

# • COMPUTER SCIENCE/CODE.ORG POS

The Computer and Information Sciences program focuses on various aspects in computing, computer science, robotics, and information science and systems. Students can take two AP courses in the pathway, Cybersecurity, and earn college credit in dual enrollment and obtain internships. This program is offered at all comprehensive high schools. Schools with AOIT – IT Programming follow the Computer Science/Code.org sequence.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • NAFTrack Certification for AOIT Programs | • Montgomery College—up to 12 credits |

**COMPUTER SCIENCE/CODE.ORG POS *AND* AOIT-IT PROGRAMMING**
*3 credits required*
***Offered at:* All high schools**
**AOIT–IT Programming Offered only at: Damascus HS, Gaithersburg HS, Springbrook HS, Thomas S. Wootton HS**

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREQUISITIES/COREQUISITES |
|---|---|---|---|---|---|
| **Computer Programming 1** | Required Coursework | ITC2024 A/B | 0.5 | CM (AL) | **Corequisite:** *Geometry or Honors Geometry* |
| **AP Computer Science Java A/B** | | ITC2007 A/B | 0.5 | CM AP (AL) | *Computer Programming 1 A/B or AP Computer Science Principles A/B* |
| **Cybersecurity Capstone A/B** | *Capstone Options | ITC2006 A/B (TP) or ITC2060 A/B (DP) | 1.5 or 1.0 | CM (AL) | *AP Computer Science Java A/B or Network Operations 2 or Advanced Web Tools and Digital Media A/B* |
| **IB Computer Science 2A/B** | | ITC2005 A/B | | CM (AL) | |
| **Computer Programming 3-Advanced Topics Computer Science A/B** | | ITC2021 A/B | 0.5 | CM (AL) | |
| **Student Internship** | | ITC2008 | 0.5 | | *Computer Science POS required coursework* |
| **Dual Enrollment** | | ITC5104 | 1.0 | CM (AL) | |

*Select one (1 credit, A/B) of the capstone options to complete the program.

# • NAF ACADEMY OF INFORMATION TECHNOLOGY-WEB DESIGN

Web Design offers students opportunities to explore careers related to website development and database administration.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • NAFTrack Certification | • Montgomery College—up to 12 credits |

| NAF ACADEMY OF INFORMATION TECHNOLOGY-WEB DESIGN |
|---|
| *3 credits required* |
| ***Offered only at:*** **Damascus HS, Gaithersburg HS, Springbrook HS, Wheaton HS, Wootton HS** |

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES/ COREQUISITES |
|---|---|---|---|---|---|
| **Website Development A/B** | Required | ITC2025 A/B | 0.5 | CM | |
| **Computer Programming 1 A/B OR Web Tools and Digital Media, Advanced A/B** | *Specialized Options | ITC2012 A/B or ITC2024 A/B | 0.5 | CM (AL) | **Corequisite:** *Geometry or Honors Geometry* |
| **Web Tools and Digital Media, Advanced A/B** | Required | ITC2012 A/B | 0.5 | CM (AL) | |
| **Information Technology Internship** | **Capstone Options | ITC2008 | 0.5 | | **Prerequisites:** *Web Design (AOIT) POS required coursework* |
| **Dual Enrollment** | | ITC5104 | 0.5 | CM (AL) | |

*Select one (1 credit, A/B) of the specialized course options to complete the program.*
**Select one (1 credit, A/B) of the capstone options to complete the program.*

# • NETWORK OPERATIONS TRADES FOUNDATION POS

The Network Operations program of study offers students opportunities to learn technical and problem-solving skills, while providing a comprehensive foundation of microcomputer and network technologies. Preparation for international industry credentials validate the knowledge students have attained. Hands-on laboratory experiences train students as entry-level technicians in the field of IT as well as for advanced studies in engineering and IT in colleges, universities, and the military. Articulated college credits may be earned through successful completion of the program. *This program is offered at Clarksburg HS, Seneca Valley HS, and Thomas Edison HS of Technology.*

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • CompTIA ITF, CompTIA A+, CompTIA Network+, CompTIA Linux+, CompTIA Security+, CompTIA PenTest+ | • Montgomery College—6 to 9 credits |

| NETWORK OPERATIONS POS *3 credits required* **Offered only at: Clarksburg HS** | | | | | |
|---|---|---|---|---|---|
| **COURSE TITLE** | **POS REQUIREMENTS** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **Network Operations 1 A/B, DP** | Required Coursework | ITC2039 A/B | 1.0 | CM 10 SSL DP | |
| **Network Operations 2, DP** | | ITC2040 | 1.0 | CM 10 SSL DP | *Network Operations 1 A/B* |
| **Network Operations Internship** | *Capstone Options | ITC2028 | 0.5 | | *Network Operations 2* |
| **Network Operations Guided Research** | | ITC2029 | 0.5 | | *Network Operations 2* |
| **Cybersecurity Capstone** | | ITC2006 A/B (TP) or ITC2060 A/B (DP) | 1.5 1.0 | CM (AL) | *AP Computer Science Java A/B or Network Operations 2 or Advanced Web Tools and Digital Media A/B* |

| NETWORK OPERATIONS POS *3 credits required* **Offered only at: Seneca Valley HS** | | | | | |
|---|---|---|---|---|---|
| **COURSE TITLE** | **POS REQUIREMENTS** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **SV Network Operations 1 A/B (SP)** | Required Coursework | ITC2062 A/B | 0.5 | 5 SSL DP | |
| **SV Network Operations 2 A/B (DP)** | | ITC2063 A/B | 1.0 | 10 SSL DP | *Network Operations 1 A/B* |
| **Cybersecurity Capstone A/B (DP)** | Additional Opportunities | ITC2060 A/B (DP) | 1.0 | CM (AL) | *AP Computer Science Java A/B or Network Operations 2 or Advanced Web Tools and Digital Media A/B* |

| NETWORK OPERATIONS POS | | | | | |
|---|---|---|---|---|---|
| *3 credits required* | | | | | |
| *Offered only at:* **Thomas Edison High School of Technology** | | | | | |
| **COURSE TITLE** | **POS REQUIREMENTS** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **Network Operations 1 Theory DP** | Required Semester A Coursework | ITC2037 | 1.0 | CM 15 SSL | |
| **Networking Operations Practicum A** | | ITC2038 A | 0.5 | | |
| **Networking Operations Practicum/B** | Required Semester B Coursework | ITC2038 B | 0.5 | CM 15 SSL TP | *Network Operations 1 Theory A and Networking Operations Practicum A* |
| **Network Operations 2, DP** | | ITC2040 | 1.0 | | |
| **Cybersecurity Capstone TP A/B** | Additional Opportunities | ITC2006 A/B (TP) | 0.5 | CM (AL) | *AP Computer Science Java A/B or Network Operations 2 or Advanced Web Tools and Digital Media A/B* |
| **Network Operations Internship** | | ITC2028 | 0.5 | | *Network Operations 2* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/network-operations.aspx*.

## • PATHWAYS IN NETWORK AND INFORMATION TECHNOLOGY, CLARKSBURG HIGH SCHOOL

Clarksburg's P-TECH Pathways in Network and Information Technology is a dual-enrollment program that enables participating students to earn both an MCPS high school diploma and an associate of applied science (AAS) degree from Montgomery College for FREE, while in high school. Students will complete their high school diploma credits while earning the AAS degree in four to six years. The AAS degree ensures that students will meet industry expectations and gain technical skills and workplace competencies as well as industry certifications. Skills acquired include software and hardware installation, network and security configuration, forensics fundamentals, virtualization, and cloud computing. This program is offered exclusively at Clarksburg High School by application, and the only entry point for this program is at the beginning of ninth grade.

| **Industry Certifications that Students May Earn** | **Postsecondary Credentials that Students May Earn Based on Articulation Agreements** |
|---|---|
| • CompTIA ITF, CompTIA A+, CompTIA Network+, CompTIA Linux+, CompTIA Security+, CompTIA PenTest+ | • Cloud Computing and Network and Information Technologies AAS, Montgomery College |

| P-TECH PATHWAYS IN NETWORK AND INFORMATION TECHNOLOGY POS | | | | | |
|---|---|---|---|---|---|
| *3 credits required* | | | | | |
| *Offered only at:* **Clarksburg HS** | | | | | |
| **COURSE TITLE** | **POS REQUIREMENTS** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **P-TECH Network Operations 1 A/B, SP** | Required Coursework | ITC2030 A/B | 0.5 | CM 10 SSL DP | |
| **Introduction to Cloud Computing DP [MC NWIT 105]** | | ITC2065 | 1.0 | CM 10 SSL DP | |
| **P-TECH Network Operations 2 A/B, SP** | | ITC2061 A/B | 0.5 | | *P-TECH Network Operations 1 A/B* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/network-operations.aspx*.

# LAW, GOVERNMENT, PUBLIC SAFETY AND ADMINISTRATION

## • FIRE SCIENCE AND EMT POS

The Fire Science and Emergency Medical Technician (EMT) program prepares juniors and seniors for a variety of careers in fire prevention, management, and emergency medical technology. Students will divide their time between their home high school and the Public Safety Training Academy. While the program is open to all MCPS students, MCPS will provide transportation to the Training Academy from the following schools: Clarksburg, Damascus, Gaithersburg, Northwest, Magruder, Rockville, Seneca Valley, and Watkins Mill. During the program, students are expected to maintain 90 percent attendance and a minimum grade of 70 percent on all assessments. Students are required to complete a minimum of 393 hours of work-based learning and take the seven certification exams. The program culminates with the opportunity to receive college credit.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
| --- | --- |
| • Emergency Medical Technician (EMT-B)<br>• Emergency Medical Responder Certification<br>• Fire Fighter I Certification<br>• Fire Fighter II Certification<br>• Truck Company Fireground Operations<br>• Hazardous Materials Operations<br>• Rescue Technician, Site Operations Certification<br>• Rescue Technician, Vehicle & Machine Extrication Certification | • Anne Arundel Community College – Up to 10 articulated credits<br>• Cecil College – Up to 32 credits<br>• College of Southern Maryland – Up to 20 credits<br>• Frederick Community College – Up to 15 credits<br>• Prince George's Community College – Up to 18 credits<br>• University of Maryland Global Campus – Varies dependent on major |

| FIRE SCIENCE AND EMT PROGRAM | | | | |
| --- | --- | --- | --- | --- |
| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO |
| Fire and Rescue 1 A/B TP | Required Coursework | PGS2013 A/B | 1.5 | CM (AL) |
| Fire and Rescue 2 A/B/Emergency Medical Technician A/B | | PGS2017 A/B | 1.5 | CM (AL) |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/fire.aspx*.

# JUSTICE, LAW, AND SOCIETY POS

The Justice, Law, and Society program prepares students for further education and careers in law enforcement, legal services, and government and public administration. Students develop critical-thinking skills by solving real-world problems and analyzing public policy related to law, law enforcement, and government. Students use information technology to access, analyze, and evaluate legal research and produce legal documents. Students develop oral and written communication skills for use in presenting legal research and legal documents. Students demonstrate knowledge of the American legal system, including the study of diverse areas of law, causes of crime, and the role of law enforcement through case studies, interviews with industry representatives, and community-service projects. These courses are career education electives.

| Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|
| • Montgomery College 3 credits |

| JUSTICE, LAW, AND SOCIETY POS<br>*Offered only at:* Montgomery Blair HS, Northwood HS, Rockville HS, Springbrook HS, Quince Orchard HS | | | | | |
|---|---|---|---|---|---|
| **COURSE TITLE** | **POS REQUIREMENTS** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **Justice, Law, and Society, Introduction A/B** | Required Coursework | PGS2000 A/B | 0.5 | | |
| **Law and the Administration of Justice A/B** | | PGS2001 A/B | 0.5 | | *Introduction to Justice, Law, and Society A or Law 1 and Introduction to Justice, Law and Society B* |
| **Contemporary Issues in Justice, Law, and Society A/B** | | PGS2002 A/B | 0.5 | CM (AL) | *Law and the Administration of Justice* |
| **Internship—Law, Government, Public Safety, and Administration** | *Capstone Options | PGS2003 | 0.5 | CM | *Contemporary Issue in Justice, Law, and Society A/B* |
| **Guided Research—Law, Government, Public Safety, and Administration A/B** | | PGS2011 A/B | 0.5 | CM | *Contemporary Issue in Justice, Law, and Society A/B* |
| **Dual Enrollment (1 credit required)** | | PGS5056 | 1.0 | CM (AL) | *Contemporary Issue in Justice, Law, and Society A/B* |

*Select one (1 credit A/B) of the capstone options to complete the program.*

For additional information, visit *https://www.montgomeryschoolsmd.org/career-readiness/plans/justice.aspx.*

# LAW ENFORCEMENT AND LEADERSHIP POS

The Law Enforcement and Leadership program includes three core courses that all students must complete. In addition, students must complete a 4th credit through either an internship, capstone, or dual enrollment. This POS focuses on introducing students to the guiding principles of public safety and law enforcement. The course will provide students with many hands-on experience,s through the use of simulations, structured debates, and inquiry projects. In collaboration with the Montgomery County Police Department, experts from a variety of related criminal justice and law enforcement careers will provide students with real-life applications of course content. Leadership principles also will be incorporated in the course as an essential component of law enforcement and public-safety-related careers.

| Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|
| • Montgomery College 3 credits |

| LAW ENFORCEMENT AND LEADERSHIP POS<br>*Offered only at:* **Thomas Edison High School of Technology, Seneca Valley HS** | | | | | |
|---|---|---|---|---|---|
| **COURSE TITLE** | **POS REQUIREMENTS** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **Foundations of Law Enforcement DP** | Required Coursework | PGS2007 | 1.0 | | |
| **Law Enforcement and Emergency Preparedness A/B DP** | | PGS2005 A/B or PGS2022 | 1.0 | | *Foundations of Law Enforcement* |
| **Administration of Law and Justice DP** | | PGS2008 | 1.0 | CM (AL) | *Law Enforcement and Emergency Preparedness* |
| **Law Enforcement Guided Research A/B** | *Capstone Options | PGS2009 A/B | 0.5 | CM | *Administration of Law and Justice* |
| **Law Enforcement Internship A/B** | | PGS2010 A/B | 0.5 | CM | *Administration of Law and Justice* |
| **Dual Enrollment Law Enforcement and Leadership** | | PGS5056 | 1.0 | CM (AL) | *Administration of Law and Justice* |

*Select one (1 credit A/B) of the capstone options to complete the program.*

For additional information, visit *https://www.montgomeryschoolsmd.org/career-readiness/plans/justice.aspx.*

# JUNIOR RESERVE OFFICERS TRAINING CORP (JROTC) POS

The Junior Reserve Officers' Training Corps (JROTC) program is a character and leadership-development program that is a cooperative effort between the U.S. Armed Forces and the high schools to produce successful students and citizens. MCPS offers programs associated with the army and navy. The purpose of JROTC is to instill in U.S. students the values of citizenship, service to the United States, and personal responsibility and a sense of accomplishment.

| Industry Certifications that Students May Earn |
|---|
| • Armed Services Vocational Aptitude Battery Exam (ASVAB) |

| JUNIOR RESERVE OFFICERS TRAINING CORP COURSES (JROTC) | | | | | |
|---|---|---|---|---|---|
| *Naval Science Offered only at:* Gaithersburg HS, John F. Kennedy HS, Paint Branch HS, Seneca Valley HS | | | | | |
| *Army JROTC Offered only at:* Col. Zadok Magruder HS | | | | | |
| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
| **Naval Science 1 A/B** | Required Coursework | JRO2000 A/B | 0.5 | 5 SSL | |
| **Naval Science 2 A/B** | | JRO2001 A/B | 0.5 | 5 SSL | *Naval Science 1 A/B* |
| **Naval Science 3 A/B** | | JRO2002 A/B | 0.5 | 5 SSL | *Naval Science 2 A/B* |
| **Naval Science 4 A/B** | Optional Coursework | JRO2003 A/B | 0.5 | 5 SSL | *Naval Science 3 A/B* |
| **Army JROTC 1 A/B** | Required Coursework | JRO2004 A/B | 0.5 | 5 SSL | |
| **Army JROTC 2 A/B** | | JRO2005 A/B | 0.5 | 5 SSL | *Army JROTC 1A/B* |
| **Army JROTC 3 A/B** | | JRO2006 A/B | 0.5 | 5 SSL | *Army JROTC 2A/B* |
| **Army JROTC 4 A/B** | Optional Coursework | JRO2007 A/B | 0.5 | 5 SSL | *Army JROTC 3A/B* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/jrotc.aspx*.

# PROGRAMS OF STUDY IN MANUFACTURING, ENGINEERING, AND TECHNOLOGY

## • PROJECT LEAD THE WAY (PLTW), ENGINEERING

The PLTW Engineering program is a national program that teaches students to apply engineering, science, math, and technical knowledge to collaboratively solve complex, open-ended problems in a real-world context. Students use the engineering design process to develop innovative solutions across multiple engineering fields. Students apply their foundational knowledge and technological skills in specialized courses such as Civil Engineering and Architecture, Aerospace Engineering, or Environmental Sustainability. In the program capstone course, teams identify an issue; research, design, and test solutions; and present their solution to practicing engineers. This program prepares students to take advantage of the high-demand career opportunities available in engineering fields, equipping them with the knowledge and skills necessary to succeed in postsecondary engineering study and the workforce. Students who successfully complete this program have opportunities to earn college credit from Rochester Institute of Technology and may earn Autodesk AutoCAD and/or Revit industry certifications.

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
| --- | --- |
| • Autodesk Certified User | • University of Baltimore County (UMBC)-3 credits |

| Offered only at: Bethesda-Chevy Chase HS, Clarksburg HS, Col. Zadok Magruder HS, Paint Branch HS, Poolesville HS, Quince Orchard HS, Rockville HS, Seneca Valley HS, Springbrook HS, Sherwood HS, Watkins Mill HS, Wheaton HS, Whitman HS | | | | | |
| --- | --- | --- | --- | --- | --- |
| **COURSE TITLE** | **POS REQUIREMENTS** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **Introduction to Engineering Design A/B** | Required TE Coursework Credit | TEC2017 A/B | 0.5 | TE CM (AL) | **Corequisite:** *Algebra 1 or higher* |
| **Principles of Engineering A/B** | Required TE Coursework Credit | ENR2016 A/B | 0.5 | CM (AL) | *Algebra 1 and Introduction to Engineering Design A/B* **Corequisite:** *Geometry or higher* |
| **Digital Electronics A/B** | Required Coursework | ENR2014 A/B | 0.5 | CM (AL) | *Principles of Engineering* **Corequisite:** *College prep math course* |
| **Civil Engineering and Architecture A/B** | *Specialized Course Options (options vary by school)* | ENR2009 A/B | 0.5 | CM (AL) | *Principles of Engineering* **Corequisite:** *College prep math and Digital Electronics A/B* |
| **Computer Integrated Manufacturing A/B** | *Specialized Course Options (options vary by school)* | ENR2013 A/B | 0.5 | CM (AL) | *Principles of Engineering* **Corequisite:** *College prep math and Digital Electronics A/B* |
| **AP Computer Science Principles A/B PLTW** | *Specialized Course Options (options vary by school)* | ITC2047 A/B | 0.5 | CM (AL) | *Principles of Engineering* **Corequisite:** *College prep math and Digital Electronics A/B* |
| **Aerospace Engineering A/B** | *Specialized Course Options (options vary by school)* | ENR2026 A/B | 0.5 | CM (AL) | *Principles of Engineering* **Corequisite:** *College prep math and Digital Electronics A/B* |
| **Environmental Sustainability A/B** | *Specialized Course Options (options vary by school)* | ENR2008 A/B | 0.5 | CM (AL) | *Principles of Engineering* **Corequisite:** *College prep math and Digital Electronics A/B* |
| **Engineering Design and Development A/B** | Required Coursework | ENR2015 A/B | 0.5 | CM (AL) | *All courses in the PLTW sequences of courses leading to this capstone course (4 credits)* **Corequisite:** *College prep math course* |
| **Internship, Engineering Technology** | Enrichment option | ENR2025 | 0.5 | | *All coursework in the PLTW engineering program of study* |

*Select one (1 credit, A/B) specialized course option to complete the program.*

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/engineering.aspx.*

# PROGRAM OF STUDY IN TRANSPORTATION TECHNOLOGIES

## • AVIATION AND AEROSPACE POS

Aviation and Aerospace is a full-time program, beginning in Grade 9, for students interested in flight and aircraft systems and/or Unmanned Aircraft Systems. The pilot pathway introduces students to safety, aerodynamics, aircraft systems, instrumentation, flight physiology and flight planning. Students can work toward obtaining a private pilot's license. The upper-level courses in the pathway will prepare students for post-secondary education, Federal Aviation Administration Part 107 certification exams, and careers in the aviation and aerospace industry. This program is guided by the Aircraft Owners and Pilots Association (AOPA).

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • FAA Private Pilot Knowledge Test—PAR; FAA Remote Pilot Unmanned Aircraft General Knowledge Test—UAG | • University of Maryland Eastern Shore 7–9 credits<br>• The Community College of Baltimore County—6 credits |

### AVIATION AND AEROSPACE POS PILOT PATHWAY OPTION
**Offered only at:** Col. Zadok Magruder HS

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | PREREQUISITES |
|---|---|---|---|---|
| Principles of Aviation and Aerospace | Required 1st Year | TRN2011 | 0.5 | |
| Exploring Aviation and Aerospace | | TRN2010 | 0.5 | Principles of Aviation and Aerospace |
| Introduction to Flight | Required 2nd Year | TRN 2018 | 0.5 | Exploring Aviation and Aerospace |
| Aircraft Systems | | TRN 2019 | 0.5 | Introduction to Flight |
| Private Pilot Fundamentals I | Required 3rd Year | TRN2020 | 0.5 | Aircraft Systems |
| Private Pilot Fundamentals II | | TRN2021 | 0.5 | Private Pilot Fundamentals |
| Pilot Flight | Required 4th Year | TRN2025 A | 0.5 | Private Pilot Fundamentals |
| Pilot Capstone | | TRN2025 B | 0.5 | Pilot Flight |

### AVIATION AND AEROSPACE POS UAS PATHWAY OPTION
**Offered only at:** Col. Zadok Magruder HS

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | PREREQUISITES |
|---|---|---|---|---|
| Principles of Aviation and Aerospace | Required 1st Year | TRN2011 | 0.5 | |
| Exploring Aviation and Aerospace | | TRN2010 | 0.5 | Principles of Aviation and Aerospace |
| Introduction to Flight | Required 2nd Year | TRN 2018 | 0.5 | Exploring Aviation and Aerospace |
| Aircraft Systems | | TRN 2019 | 0.5 | Introduction to Flight |
| Unmanned Aircraft Fundamentals I | Required 3rd Year | TRN2022 | 0.5 | Aircraft Systems |
| Unmanned Aircraft Fundamentals II | | TRN2023 | 0.5 | Unmanned Aircraft Fundamentals I |
| UAS Flight 1 | Required 4th Year | TRN2024 A | 0.5 | Unmanned Aircraft Fundamentals II |
| UAS Flight II Capstone | | TRN2024 B | 0.5 | UAS Flight 1 |

# • AUTOMOTIVE COLLISION REPAIR POS

The Automotive Collision Repair program prepares students interested in pursuing a career in the automotive collision field. Students learn through authentic experiences as they use tools and materials to repair panels, doors, windows, and other damaged parts of automobile bodies, and painting techniques. Students completing this program are eligible to receive recognized industry certifications. This course is aligned with the Automotive Service Excellence (ASE) Education Foundation Paint & Refinish and Non-Structural standards. The Thomas Edison HS of Technology program includes additional certifications in the area of Non-structural Repair.

| Industry Certifications that Students May Earn |
|---|
| Entry-level ASE certification for the following:<br>• Nonstructural Analysis and Damage Repair<br>• Painting and Refinishing<br>• Structural Analysis and Damage Repair<br>• NonStructural Technician<br>• Steel GMA Welding |

| AUTOMOTIVE COLLISION REPAIR DOUBLE PERIOD—POS | | | | | |
|---|---|---|---|---|---|
| *4 credits required* | | | | | |
| *Offered only at:* **Gaithersburg HS** | | | | | |
| **COURSE TITLE** | **POS REQUIREMENTS** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **Automotive Collision Repair 1 A/B DP** | Required Coursework | TRN2008 A/B | 1.0 | 10 SSL DP | |
| **Automotive Collision Repair 2 A/B DP** | | TRN2009 A/B | 1.0 | 5 SSL DP | *Automotive Collision Repair 1 A/B* |
| **Automotive Collision Repair 3 A/B DP** | *Capstone Options | TRN2010 A/B | 1.0 | 10 SSL DP | *Automotive Collision Repair 2 A/B* |
| **Internship, Auto Collision Repair** | | TRN2016 | 0.5 | | *Automotive Collision Repair 1 A/B* |

| AUTOMOTIVE COLLISION REPAIR PLUS TRIPLE PERIOD—POS | | | | | |
|---|---|---|---|---|---|
| *6 credits required* | | | | | |
| *Offered only at:* **Thomas Edison HS of Technology** | | | | | |
| **COURSE TITLE** | **POS REQUIREMENTS** | **COURSE CODE** | **COURSE CREDIT BY SEMESTER** | **COURSE INFO** | **PREREQUISITES** |
| **Automotive Collision Repair 1 A/B TP** | Required Coursework | TRN2013 A/B | 1.5 | 15 SSL TP (H) | |
| **Automotive Collision Repair 2 A/B TP** | | TRN2014 A/B | 1.5 | 15 SSL TP (H) | *Automotive Collision Repair 1 A/B* |
| **Internship, Automotive Collision Repair** | Additional Opportunities | TRN2016 | 0.5 | | *Automotive Collision Repair 1 A/B* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/automotive-repair.aspx*.

# • AUTOMOTIVE TECHNOLOGY POS

Automotive Technology students are offered an opportunity to train for skilled positions in the automotive professions. This program develops students' technical, analytical, and communication skills. Students are provided instruction and hands-on experience in many areas, including engine performance and repair, suspension and steering, brakes, electrical/electronic systems, and heating and air conditioning to develop their knowledge and skills in the maintenance, repair, and sales and marketing of automobiles. This course is aligned with the Automotive Service Excellence (ASE) Education Foundation.

*Automotive Technology courses align to with Automotive Service Excellence (ASE) standards for Maintenance and Light Repair (MLR) standards, as indicated. The Thomas Edison HS of Technology program requires students to complete additional tasks on their competency profile to meet the MLR plus designation.*

| Industry Certifications that Students May Earn | Postsecondary Credentials that Students May Earn Based on Articulation Agreements |
|---|---|
| • Entry-level ASE—Certification for Maintenance Light Repair (MLR)<br>• Optional: Brakes, Electrical/ Electronic Systems, and/or Suspension & Steering | • Community College of Baltimore County, Catonsville—up to 18 credits<br>• Montgomery College—3 credits |

### AUTOMOTIVE TECHNOLOGY MLR DOUBLE PERIOD—POS
*4 credits required*

**Offered only at: Damascus HS, Gaithersburg HS, Seneca Valley HS**

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| **Automotive Technology 1 A/B DP** | Required Coursework | TRN2006 A/B | 1.0 | 10 SSL DP | |
| **Automotive Technology 2 A/B DP** | | TRN2004 A/B | 1.0 | 10 SSL DP | *Automotive Technology 1 A/B* |
| **Automotive Technology 3 A/B DP** | Additional Opportunities | TRN2005 A/B | 1.0 | 10 SSL DP | *Automotive Technology 2 A/B* |
| **Internship, Automotive Technology** | | TRN2015 | 0.5 | | *Automotive Technology 1 A/B* |

### AUTOMOTIVE TECHNOLOGY MLR PLUS TRIPLE PERIOD—POS
*6 credits required*

**Offered only at: Thomas Edison HS of Technology**

| COURSE TITLE | POS REQUIREMENTS | COURSE CODE | COURSE CREDIT BY SEMESTER | COURSE INFO | PREREQUISITES |
|---|---|---|---|---|---|
| **Automotive Technology 1 A/B TP** | Required Coursework | TRN2011 A/B | 1.5 | 15 SSL TP (H) | |
| **Automotive Technology 2 A/B TP** | | TRN2012 A/B | 1.5 | 15 SSL TP (H) | *Automotive Technology 1 A/B* |
| **Internship, Automotive Technology** | Additional Opportunities | TRN2015 | 0.5 | | *Automotive Technology 2 A/B* |

Additional program information can be found at *https://www.montgomeryschoolsmd.org/career-readiness/plans/dealership-training.aspx.*