

# I: *Project Lead the Way: The Engineering Academy (PLTW)*

Project Lead the Way is a national program forming partnerships among Public schools, Higher education Institutions and the Private Sector to increase the quantity and quality of engineers and engineering technologists graduating from our education systems. First developed in the '80's, PLTW is now offered in over 45 states and the District of Columbia.

PLTW has developed a four year sequence of courses, which, when combined with college prep math and science courses in high school, introduces students to the scope, rigor and discipline of engineering and engineering technology prior to entering college

## **Benefits for students**

The Academy of Engineering courses are affiliated with Project Lead the Way. Further information regarding [Project Lead the Way](#) can be obtained from their website. Project Lead the Way allows students the opportunity to gain college credit if they maintain an 85% average in the course, pass the final exam and register for the credit.

<b>Courses Offered at Watkins Mill High School</b>
<b>Introduction to Engineering Design (IED)</b> A course that teaches problem-solving skills using the engineering design development process. Models of product solutions are created, analyzed and communicated using hand sketching and solid modeling computer design.
<b>Aerospace Engineering</b> The major focus of the Aerospace Engineering TM (AE) course is to expose students to the world of aeronautics, flight, and engineering. Students will be introduced to the Project Lead The Way® activity-based, project-based, and problem-based learning through exploring the world of aerospace engineering. Students should have experience in physics, mathematics, and technology education. They will employ engineering and scientific concepts in the solution of aerospace problems. The entire curriculum sequence will include experiences from the diverse fields of Aeronautics, Aerospace Engineering TM, and related areas of study. Lessons will engage students in engineering design problems related to aerospace information systems, astronautics, rocketry, propulsion, the physics of space science, space life sciences, the biology of space science, principles of aeronautics, structures and materials, and systems engineering.
<b>Principles of Engineering (POE)</b> Exploring various technology systems and manufacturing processes help students learn how engineers and technicians use math, science and technology in an engineering problem solving process to benefit people. the course also includes concerns about social and political consequences of technological change.

### Digital Electronics (DE)

A course in applied logic that encompasses the application of electronic circuits and devices. Computer simulation software is used to design and test digital circuitry prior to the actual construction of circuits and devices.

**Engineering Design and Development (EDD)** This is the capstone course for the Project Lead the Way (PLTW) advanced engineering program. At the end of the course, teams present their research paper and defend their projects to a panel of engineers, business leaders, and engineer college educators for a professional review and feedback. This course equips students with the independent study skills that they will need in postsecondary education and careers in engineering and engineering technology

### Our Teachers

Contact Staff

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[Project Lead the Way](#) -- for more information about this national program:



## ***II: National Academy of Finance: (NAF)***

The Academy of Finance at Watkins Mill HS is affiliated with the National Academy Foundation (NAF) which is a leader in the movement to prepare young people for college and career success. For nearly 30 years, NAF has refined a proven educational model which includes industry-focused curricula, work-based learning experiences, and business partner expertise.

Program benefits and outcomes:

Career academies increase the engagement of high school students and provide a way for those beyond the walls of the school to enhance students' educational experiences.

NAF academies succeed with the investment of schools, students, businesses, and community leaders who believe young people deserve a high return on their education.

Academy of Finance students have explored a career path and are either college or workplace ready post-graduation.

**Contact:** Glenn Brooks, NAF program director, teacher: [Glenn\\_Brooks@mcpsmd.org](mailto:Glenn_Brooks@mcpsmd.org)



## ***Academy of Finance Classes***

**Financial Planning (Honors)** – The class that every student should take! .5 credit  
Co/Prereq: Accounting

Learn how to accomplish your goals in life. You will leave the class knowing how to become a millionaire, how to purchase the house of your dreams, how to save a bundle when buying a car, how to get out of debt, how to use credit wisely, how to purchase stocks, bonds and mutual funds, and much more including playing the stock market game.

**Financial Services** .5 credit  
Co/Prereq: Accounting

Learn how to make credit work for you and how banks work. After all, sooner or later you will need a loan for a major purchase. Individuals with a good credit history get approved at the lowest rates. The more you know about the banking system, the more you can get out of life. Ever thought of starting your own business? Banks offer you a lot more than just a checking and savings account.

**Accounting A & B** .5 credit each semester

Not just for CPAs! If you want to own your own business, manage a business or major in business/finance in college, then accounting is for you! Contrary to what you might think, accounting is not hard, and you don't need to be a math whiz to master the class.

### **Economics and the World of Finance**

.5 credit

Co/Prereq: Accounting

For students interested in college-level work in economics. Topics include fundamental economic concepts such as scarcity, opportunity costs, production possibilities, specialization, comparative advantage, demand, supply, and price determination. Major topics include measurement of economic performance, national income and price determination, international economics and growth.

### **Small Business Ownership (Business Management and Entrepreneurship A)**

Prereq: Software Applications A & B is highly recommended

.5 credit

Whether students' dreams involve working at a fast-moving entrepreneurial organization or running an existing company, in this foundational course they learn the necessary skills they need to understand business principles. Student entrepreneurs work in teams to investigate topics such as business opportunities, feasibility studies, development of a business plan, financing alternatives, marketing, and legal forms of organization.

### **Software Applications by Design A & B**

.5 credit each

Offers students the opportunity to investigate all aspects of the computer. Students will become proficient in their skill of basic computer software. Multidisciplinary projects will involve using various applications such as word processing, spreadsheets, databases, graphics, web pages and presentation software.

**All Academy of Finance students will be required to participate in an internship during the summer at the end of their junior year and take a college business class during the spring of their senior year. Success completion will earn graduate status from the National Academy Foundation and a diploma will be awarded at the county-wide MCPS graduation ceremony.**

## ***III: Early Child Development Career Academy***

The Early Child Development program at Watkins Mill HS is affiliated with the Maryland State Department of Education & Montgomery College.

The Maryland State Department of Education Office of Childcare Credentialing has approved the MCPS application for “Communication Skills for Child Care Professionals” training. As a result, students in the Early Child Development program who meet all of the requirements may earn the 90 + 9 Clock Hours Certification.

Montgomery College has an articulation agreement with MCPS. As a result students enrolled who meet all the requirements can earn up to 9 College Tech Prep credits.

### **Program benefits and outcomes:**

The Early Child Development Pathway Program increases the engagement of high school students and is a real-life learning experience.

The Program allows students to see beyond the walls of the school to enhance students’ educational experiences in the career of their choice. Students follow their career interests in high school for a smooth transition to college.

Due to changing family dynamics and workplace demands, employment opportunities continue to grow in careers related to children. In addition, the nationwide shortage of educators affords students excellent opportunities in the classroom as well as in the business world.

Early Child Development students have explored a career path and are either college or workplace ready post-graduation.

**Contact:** Kim Krill, Child Development Program Director/Teacher:  
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**Early Child Development Classes**

**Child & Adolescent Development 1 A/B** 0.5 credit per semester

In this introductory course, students become part of an education team that has direct interaction with 4-year olds in a lab school setting. Students interested in education, pediatric medicine, physical therapy, family law, psychology, and sociology enroll in this course in preparation for college and career experiences. After a rigorous training period, students become part of a team of teachers responsible for the day-to-day workings of a lab school.

Prerequisite: Semester A required before B

Grade level 9-10-11-12

**Child & Adolescent Development 2 A/B** 0.5 credit per semester

After successful completion of Child Development 1, students continue to develop teaching skills as they assume increased leadership responsibilities in the lab school setting. Students are responsible for program management as they develop and implement age-appropriate experiences for preschoolers. Upon completion of Child Development 2 and all certification requirements, students may earn certification in the 90+9 Clock Hours Program. This certification may allow a student to obtain senior staff status on the childcare industry.

Prerequisite: Child & Adolescent Development 1 A/B, semester A is required before B

Grade Level: 10-11-12

**Child & Adolescent Development 3 A/B** 0.5 credit per semester

Students research careers in education and other child-related fields of study. They pursue their interest through independent study, research, advocacy projects, field trips, and observations. Students complete their professional portfolios and participate in the interview process as they prepare for continuing education and career experiences.

Prerequisite: Child & Adolescent Development 2 A/B

Grade Level: 11-12

**Internship, Education, Training & Child Studies** 0.5 credit per semester

Students apply knowledge and skill sets acquired in their career pathway programs to an authentic internship. Collaborating with professionals, and mentors in the related career field, students participate in program-specific learning, leadership seminars, networking opportunities and relevant workplace experiences.

Prerequisite: Child & Adolescent Development 1 A/B and 2 A/B

Grade Level: 11-12

## ***IV: Hospitality Management Career Academy***

**Goals:** Prepare students for the job market directly after graduating, or to attend culinary or hospitality college Prepare students to enter the job market or pursue postsecondary education in related fields of study.

**Program Description:** ProStart is the two-year career-building program for high school students in Hospitality Management and Foodservice. Students gain proficiency in culinary and hospitality management skills. They are eligible to earn the [ServSafe Certification](#) which is a Food Service Managers certification required by the Health Department in all foodservice settings. At the end of the program, ProStart graduates possess a solid foundation needed to progress in their careers and postsecondary education, and they receive the [ProStart National Certificate of Achievement](#). This certificate recognizes students who have successfully completed the program and are eligible to earn special scholarships and college credit from colleges and universities across the country.

**The Outside Agency That Certifies Completion Or Graduation:** National Restaurant Association (ProStart and ServSafe)

**Articulation:** ProStart has articulation with Culinary Schools across the country. View the **Passport to Education** for more details at:  
<http://prostart.restaurant.org/downloads/pdf/4.1.3.7.pdf>

**Contact:** Lisa Gilbert, Academy Director/Teacher: [Lisa\\_M\\_Gilbert@mcpsmd.org](mailto:Lisa_M_Gilbert@mcpsmd.org)

**Required Classes:** 2011-12 Level 1: Culinary Essentials, Level 2: International Cultures and Cuisines, Internship: 4816 (2.0 credits) Students must earn 400+ hours of industry experience in a PAID internship.

**4825/4826 Culinary Essentials A/B** 0.5 credit per semester

This course offers students opportunities to refine their culinary skills while building important skills for postsecondary education and careers. Attention is given to all aspects of careers in the hospitality industry. Laboratory experiences provide opportunities for students to build culinary arts and foodservice management skills. ProStart®, a nationally recognized curriculum, has been infused into the curriculum, providing students with authentic skills. Students take the ServSafe Food Protection Manager and ProStart industry credential exams.

**Prerequisite:** Culinary Essentials A required before B

**Grade Level:** 10 - 11 - 12

No repeats for credit

**4630/4640 International Cultures and Cuisines A/B** 0.5 credit per semester

International Cultures and Cuisines examines the emphasis on food as it relates to the culture of other countries or cultural groups in the United States. Workforce trends, career paths and postsecondary requirements are examined. ProStart®, a nationally recognized curriculum, has been infused into the curriculum, providing students with authentic work-based skills. Students take the ServSafe Food Protection Manager and ProStart industry credential exams.

**Prerequisite:** Semester A is a prerequisite for semester B

**Grade Level:** 9 - 10 - 11 - 12

No repeats for credit

### **4816 Internship, Human and Consumer Services, Hospitality and Tourism**

0.5 credit per semester

Students apply knowledge and skill sets acquired in their career pathway programs to an authentic internship. Collaborating with professionals and mentors in the related career field, students participate in program-specific learning, leadership seminars, networking opportunities and relevant workplace experiences.

**Grade Level:** 11 - 12

Unlimited repeats for elective credit

## ***V: Medical Careers Academy***



The Medical Careers Program is a community-based program that enables students to explore careers in the health care industry and to gain knowledge and skills related to patient care practiced in hospitals and long term care facilities.

The courses are Medical Careers, Medical Careers Science, and Medical Careers Internship. It is a science and career development credited program. Students learn medical terminology, anatomy, physiology, disease conditions and prevention, cardiopulmonary resuscitation, and nursing assistant patient care skills. Students get hands-on clinical experience at a long-term care center and a hospital during the second semester of the first year program. The Medical Career Internship allows the student to explore options and make thoughtful decisions about health care career interests and continuing education. It provides the student the opportunity to experience the health care environment while under the supervision of a medical professional. The experience integrates the professional work environment and classroom skills.

Upon successful completion of the first year program, students are eligible for certification as a nursing assistant by the Maryland Board of Nursing. The American Heart Association also certifies them in Health Care Provider CPR.

The goal of the program is to prepare students for immediate employment and post-secondary education

**Contact:** Linda Mitchell: Medical Careers Program Director/Teacher:  
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Courses in Medical Careers:

**3995/3996 Medical Careers Science A/B (SC)** 0.5 credit per semester

Instruction focuses on anatomy, physiology, disease processes, medical terminology, patient care skills, CPR, and current issues related to the health care profession. Other areas of emphasis include physical therapy skills, taking vital signs, principles of infection control, and care of the hospitalized. Students receive CPR certification and have the opportunity for certified nursing assistant and geriatric aide certification, depending upon program location. Students must have a cumulative GPA of 2.5 or better and apply to the program. Allow for 1 period of travel time.

Prerequisite: Grade of B or better in Biology A/B or Chemistry A/B

Corequisite: Biology A/B or Chemistry A/B (one must be completed prior to enrolling) and Medical Careers A/B

Grade Level: 11 - 12

No repeats for credit

**5418/5419 Medical Careers A/B** 0.5 credit per semester

Instruction focuses on anatomy, physiology, disease processes, college-level medical terminology, patient care skills, CPR, and current issues related to the health care profession. Other areas of emphasis include physical therapy skills, taking vital signs, principles of infection control, and care of the hospitalized. Students have the opportunity for nursing assistant certification, geriatric aide certification, and CPR certification, depending on program location.

Students must apply to the program, have a cumulative GPA of at least 2.5, and have earned a grade of B or better in Biology A/B or Chemistry A/B. Students should allow for travel time in their schedule.

Corequisite: Biology A/B or Chemistry A/B (one must be completed prior to enrolling) and Medical Careers Science A/B

Grade Level: 11 - 12

No repeats for credit

**5415 Internship, Medical Careers** 0.5 credit per semester

Students who have successfully completed the program in Grade 11 may elect an internship in Grade 12 for one, two, or three periods, under the supervision of the program teacher. The objectives of the internship are those of the general student internship. Learning activities, however, are specifically related to students' medical career goals. Students must provide their own transportation. Lab fee may be required. Students may enroll in course for more than one period.

Prerequisite: Grade of B or better in Medical Careers A/B and CNA certification

Corequisite: Approved upper-level science course

Grade Level: 12

Unlimited repeats for subject credit