Manlius Pebble Hill School

Upper School Course Descriptions

2022 – 2023

ACADEMIC PROGRAM INFORMATION

- Students must be enrolled in six classes each semester.
- Five essential academic courses are required each semester.
    - An essential academic course is defined as a course that:
        - 1) has a system of formal assessments.
        - 2) has regular and consistent assignments that are completed outside of class.
- Students in Grades 10 – 12 may be enrolled in a maximum of 8 classes each semester with permission from the Head of Upper School.
- Students in Grade 9 may be enrolled in a maximum of 7 classes each semester.
    - Core Health Seminar is required of all ninth-grade students in the first semester.
        - Does not count as one of the six required classes.
        - With permission from the Head of Upper School, it may not count toward the maximum of 7 classes.
- Students may enroll in a maximum of 3 Advanced Placement courses in an academic year.
    - Permission from the Head of Upper School is required to enroll in more than 3 Advanced Placement courses.
- Continuous enrollment in Core Health Physical Fitness is required over four years but is not included in the credit accumulation for graduation.
- A Senior Capstone must be completed by the end of senior year.

GRADUATION CREDITS REQUIRED

- Graduation credits earned begin in 9th grade, even when advanced in Mathematics and World Language
- A total of 24 credits are required for graduation

English ……. 4 credits
History (including U.S./American History) …… 3 credits
Mathematics (including Algebra, Geometry, Algebra 2/Trigonometry) …….. 3 credits
Science (including Biology, Chemistry, Physics) …… 3 credits
World Language (completion through Level 3) ……. 3 credits
Computer and Information Science.…….…… ½ credit
Core Health Wellness …… ½ credit
Performing and/or Visual Arts ……... 1 credit
Electives ……... 6 credits
Total …… 24 credits

Advanced Placement and Advanced Studies at MPH

As announced in February, MPH is beginning a transition beyond Advanced Placement (AP) courses and toward an advanced independent curriculum. Here are a few important points to keep in mind:

- Almost all of the AP courses available in 2021-2022 will be available in 2022-2023.
- There will be a diminishing number of AP courses offered through 2024-2025.
- AP European History, which was primarily available to seniors, will be open to juniors in 2022-2023.
- Courses that carry the "AS" designation (for Advanced Studies) are MPH's most challenging courses that are not AP courses.
- Some departments have courses categorized as "advanced" because they are part of a progression of courses (e.g., French IV) or require additional preparation (e.g., Advanced Recital) to enroll in them. Only courses with the AS prefix are Advanced Studies courses.

Here are the designated AS courses for 2022-2023, several of which are new for next year, and the departments that offer them:

- AS Programming Lab (Computer and Information Science, second semester)
- AS American Literature: Bearing Witness (English, full year)
- AS More Than a Game: Sports and American Culture (English and History, first semester)
- AS African-American Studies and the Idea of Race (English, second semester)
- AS Post-Classical World History (History, full year)
- AS The American Experience (History, full year)
- AS The North American City (History, second semester)

Additional information about this transition is available under the Academics tab of the MPH website. Visit https://www.mphschool.org/ap-transition/.

Computer and Information Science

The Computer and Information Science department provides students the opportunity to explore technology from all perspectives. Whether learning about software design or the development of computer-generated imagery, it is important for students to think about themselves as both media makers and theorists. Each course is designed to help students learn how to maneuver different technological landscapes and understand the power they have at their fingertips. CIS courses are rotated annually based on current trends. Every class includes at least one unit where students will explore some form of programming.

Courses for Graduation Credit

First Semester

Broadcasting (Grades 9-12, Zlomek)
The Internet Age has had a dramatic effect on all modern industries. From reading to retail, there has been a seismic shift in the ways traditional industries operate. In the broadcasting world, television re-runs are being replaced with video-on-demand, news conferences can be held anywhere via streaming services, and modern radio broadcasting comes in the form of podcasting. Broadcasting is a course designed to teach students about the power their computers and phones offer as mass communication devices. Students will work together to create podcasts, schedule and produce livestreams, and design and market their own YouTube channels. Students will learn to use software including Adobe Premiere, Adobe Audition, and Open Broadcaster Software.

Cinematic Storytelling (Grades 9-12, Zlomek)
Cinematic Storytelling introduces students to the process of audio, video, and image development and distribution. Students learn the ins and outs of motion picture production, then use their skills to script, shoot, edit, export, and publish videos for social media and film festivals. By the end of the semester, students will have the skills to create their own documentaries, narrative videos, and audio presentations, as well as to write in the traditional script format. Over the course of the semester, students will utilize video and audio editing software including Adobe Audition and Adobe Premiere Pro.

Introduction to Programming (Grades 9-12, Reeve)
Anyone with a passion for the creative process, who is interested in logic and problem-solving, can learn to develop games, applications, and software. Introduction to Programming is intended to ease students into the programming mindset by developing games in simpler languages like Scratch (developed by MIT) and OpenSCAD, then progress to the more difficult object-oriented languages like Java and Python. By the end of the course, students will have a foundational understanding of how programming works and will be able to create simple games and programs using different languages and design programs.

Social Media Marketing (Grades 9-12, McBennett)
The power of social media cannot be understated. A technology that started being used only by a niche youth population has now infiltrated all generations and demographics as it plays an ever-present role in communications and commerce. Posting to Instagram, Snapchat, or TikTok can develop a brand following more quickly than any combination of billboards or television commercials. Social Media Marketing is a class that looks at the effect social media has had on culture around the world through analysis and actions. Students will work with production groups to create brands and use social media outlets to promote them. Through real-world interactions, students will become conscientious social media producers and managers.

Second Semester

Entrepreneurship (Grades 10-12, McBennett)
Entrepreneurship is a challenging, experiential class that teaches the skills of business innovation through hands-on, technologically focused scenarios. To foster core entrepreneurial skills like planning, communication, and decision making, students will participate in experiential projects connected with small, local businesses. As a capstone project, students will also work in teams to create a product and transform it into a sustainable business or non-for-profit organization.

Computer Graphics (Grades 9-12, McBennett)
Visual imagery can function on a variety of different levels. In order for an image to stand out to a viewer, or experience viral culture online, a creator must understand the process of image development, the audience that will see it, and the best method for its distribution. Computer Graphics is designed to give students an introduction to the world of graphic design and digital image creation. Throughout the semester, students will have the opportunity to create visual sculptures, visual stories, internet memes, logos, print production, and animated GIFs. Students learn the ins and outs of pixel-based and vector designs through the use of software like Adobe Photoshop and Vectr and 3D design using OpenSCAD.

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Anyone with a passion for the creative process, who is interested in logic and problem-solving, can learn to develop games, applications, and software. Introduction to Programming is intended to ease students into the programming mindset by developing games in simpler languages like Scratch (developed by MIT) and OpenSCAD, then progress to the more difficult object-oriented languages like Java and Python. By the end of the course, students will have a foundational understanding of how programming works and will be able to create simple games and programs using different languages and design programs.

AS Programming Lab (Grades 10-12, Zlomek; offered in alternate years)
The line between programming and becoming a programmer is a blurry one that most creators struggle with until they have reached an abundance of success. What these digital inventors fail to realize is that most programmers working in the industry today are self-taught. The Advanced Studies Programming Lab is intended to help students shift themselves from casual programmers to active and public creators through a series of activities that will put student-made application on display in both physical and digital locations. Students will learn advanced programming tactics in the Scratch and Java languages as well as explore creative coding principles using the Processing language. *Introduction to Programming is a prerequisite for this course.*

Core Health

At Manlius Pebble Hill, our students' health, safety, and well-being is our priority. Instruction on health and wellness is rooted in the interactions of the various components of each individual's life: social, emotional, physical, functional, and intellectual. In these course offerings, and across our academic curriculum and co-curricular programming such as Advisory, students learn about and reflect on the many factors that influence their health and wellness, including behavior, environment, relationships, decision making, critical thinking skills, and knowledge based on current research.

Course for Graduation Credit

First or Second Semester

(The semester this course is taken is determined when schedules are created.)

Core Health Wellness (Grade 10)
This course emphasizes the consequences, both positive and negative, of personal choices, decisions, and behaviors. Students learn about the impacts of controllable factors on long-term health and wellness, and they improve their understanding of the external influences on their ideas and opinions. The study of nutrition, exercise, sleep, hydration, reproductive health (including discussion and activities related to contraceptive methods and abstinence), stress management, and healthy relationships form the core of the course. As the course progresses, students gain an appreciation of how the health of the mind, body, and spirit reinforce one another. On occasion, speakers from health-related community agencies present to and facilitate the class. Students acquire CPR/AED certification through this course.

Required Course

First Semester

Core Health Seminar (Grade 9)
Upper School Seminar centers on MPH's core values to help ninth graders feel positively about themselves and live a healthy lifestyle while learning effectively in the Upper School. In doing so, it exposes ninth graders to the strategies, skills, habits, and mindsets that can help them gain more control over their Upper School academic experience. In this course, students practice and reflect on keeping track of and prioritizing assignments; planning ahead; exercising self-awareness as learners (metacognition); asking good questions and contributing to class; independently expanding their knowledge base; and recognizing their potential for growth. In once-a-cycle class meetings, a key point of emphasis involves redefining appropriate academic goals for Upper School students by giving more attention to the process by which they go about learning and less attention to specific outcomes.

Elective Courses

Full-Year

Emergency Medical Technician (Grades 11-12, Tompkins; application required)
This training program requires a commitment to the course of study, and a striving for excellence on the part of the student. The intent is to produce quality pre-hospital care providers as a means of enhancing the

emergency care provided in the field. The course material and examination maybe different than courses you have taken in the past. Although most material will be presented in class, it is expected that each student will spend additional time outside of class on didactic and practical skills. Students will be required to perform clinical training which includes, but not limited to, responding to 911 calls, providing patient care and transporting real patients in an ambulance. Additional requirements are detailed in the application materials. Registration for this course occurs outside of the course registration process. For more information, contact Mr. Tompkins (stompkins@mphschool.org).

Second Semester

The Psychology of Stress and Well-Being (Grades 11-12, Strickland) Stress is considered any type of change that creates a physical, emotional, or psychological response. In the ever-changing world we live in, stress is everywhere and affects everyone. To better cope with these constant changes in our lives, we need to understand what stress is, what causes us to feel stress, and how to cope with stress. This course will explore the psychological and physiological sources of stress, examining the effects on our mental and physical well-being. A significant part of the class will be devoted to learning and practicing stress management strategies and techniques. Students will engage in a final project in developing and implementing workshops for a particular group of the MPH community. Students who enroll in this class must come with an open mind and expect to engage in all activities.

Physiology (Grades 10-12) *Pre-requisite: Biology*

What's going on under your skin? How does your body break down your turkey sandwich and turn it into energy? How does that energy then allow you to move your arms and legs? Do we really need all 600 or so of our muscles? This course dives into the various body systems, answering questions such as these, and much more. The human body is a beautifully intricate network of systems that work together in more ways than we even know, fine-tuned at a level we can barely comprehend. This course aims to cover a fraction of those miraculous connections.

Core Health Physical Fitness

The main point of emphasis of Physical Fitness in the Core Health Department is to instill healthy, lifelong fitness habits in our students. The department is committed to providing the knowledge and tools necessary for all our students to become lifelong learners in cutting edge physical fitness practices while finding physical activities that are not only age-appropriate, but activities that they actually enjoy performing and can regularly participate in well beyond graduation.

The Core Health Department wants to ensure that all Upper School students have the chance to participate in activities that interest them. The school offers a range of physical fitness options for students to choose from in order to obtain the proper Physical Education credits that are required for graduation. Students can choose from a wide variety of sports, opt for a Physical Fitness independent study, or participate in a robust dance elective. In addition, students have the choice to do a combination of these options to meet the proper credit requirements.

Graduation Requirement

Each student is required to complete one credit per year, for a total of four credits, by graduation. Students have several options to meet this criterion during each academic year.

Options

Participate on Two Athletic Teams
Traditionally, MPH offers the following sports: boys and girls alpine skiing, boys and girls basketball, boys and girls cross country, boys and girls soccer, boys and girls tennis, boys and girls track and field, boys golf, and girls volleyball. In addition, we combine with other schools to offer boys baseball, boys lacrosse, and girls softball. As with the current academic year, our 2021-2022 athletic offerings will depend on the timing and length of the competitive seasons.

Participate in Dance
Students may take dance for an entire school year or for one semester when combined with another option.

Independent Study
Students can choose to pursue a physical activity or multiple activities of their choice to participate in outside of school. Examples of previous independent studies include gymnastics, martial arts, swimming, and rock climbing. Each student is required to document their physical activity with their Physical Fitness advisor throughout the course of each academic quarter.

Participate in a combination of two of the three options described above.

English

English classes at MPH combine seminar discussions, group collaborations, independent in-class writing, quiet reflection, and other sorts of experiences that allow students to explore literature creatively and analytically. Through survey courses, electives, and Advanced Placement offerings, Upper School students explore a culturally diverse range of fiction, nonfiction, drama, and poetry, as well as journalism, art, film, and music. Our students assume increasing responsibility for their learning as they design projects, work collaboratively, evaluate their work, and reflect on the connections between classroom experiences and their own lives. The English Department provides additional learning opportunities through *the Pebble*, MPH's student news and culture magazine.

Courses for Graduation Credit

World Literature 9
World Literature 9 builds a foundation of content and skills essential to all US English courses. In this course, students practice and refine analytical and narrative writing skills such as generating thesis statements, integrating and analyzing quotes to support an argument, organizing paragraphs, and establishing coherence and unity throughout an essay. A wide range of ancient and modern sources serve as the content and context for developing these skills. Students read texts from the two pillars of Western literature, the Biblical tradition and the Ancient Greek tradition, including stories from the Hebrew Bible and Christian scriptures, Sophocles' *Antigone* and *Oedipus Rex*, and Homer's *Odyssey*. Throughout the year, more modern readings in poetry, nonfiction, and fiction balance the older texts. This combination of readings induces students to appreciate and examine long-held ideas about character and culture, and to explore how the individual can find meaning within a larger world.

World Literature 10
In tenth grade, students encounter voices from around the world, as well as ones often left out of the canon of American and English literature, in modern short fiction, novels, plays, poetry, and essays. Some of the book length readings may include *The God of Small Things*, *Homegoing*, *Othello* and/or *Julius Caesar*. With each text, students consider the historical and cultural contexts (both the writers' and their own) that contribute to the layers of meaning available in the literature. Students practice writing in many modes – analytical, creative, descriptive, satirical, and more – often using the texts they have read as models for their own work. While exploring and experimenting with new perspectives and writing styles in World Literature 10, students think deeply and critically about these new experiences as well as their own assumptions and habits of thought.

American Mythology, American Literature (Grade 11)
This course celebrates this continent's writers and storytellers and recognizes the seminal ideas, deep-seeded values, and innovative styles born of our unique cultural heritage. Students will read examples of every American literary and cultural era, pre-Columbian to present, including Native American traditional tales, Puritan sermons, gothic short fiction, Transcendental essays and poetry, and more. We'll take the measure of those authors who've told the greatest stories (from Washington Irving to Louise Erdrich), the poets who reached for new forms of expression (from Dickinson to Whitman to Angelou to Oliver), and the essayists and writers of non-fiction (from Thoreau and Douglass to Coates and Wilkerson) who have wondered at the cracks in this country's soul. While studying the themes and obsessions that drive our citizen-writers, students will explore the ways in which these stories and their themes constitute and reflect our national identity. They will not only write about the literature they read but will themselves explore those themes in their own writings, discussions, and presentations.

AS American Literature: Bearing Witness (Grade 11)
"Silence waits/for truth to break it" writes Naomi Shihab Nye in her poem "My Wisdom." In the cacophony of American voices, it can be a lifetime's challenge to find both some quiet and a voice speaking what we need to hear. The Bearing Witness curriculum sifts through the many American voices found in novels, poems, short stories, and works of nonfiction to connect with familiar and unfamiliar writers who push their works–and their readers–to see from new angles and hear some previously unheard "wisdom." From immigrant voices of every era to writers who founded fresh styles and broached unvoiced subjects—and from writers who paint the vividly real to those who playfully distort the observable world—the course will invite students to learn who is speaking, grasp the vision being conveyed, and determine what difference that might make in their own lives and in the wider world.

Rhetoric and the Public Sphere (Grade 12)
In Rhetoric and the Public Sphere, students will read fiction, longform nonfiction, journalism, and academic writing to examine how personal and cultural beliefs are formed, and how those beliefs shape the way we talk about matters of political and cultural relevance. This discussion-based class will also include a series of writing assignments that aim to acquaint students with the expectations of a college classroom. As the year progresses, students will bring the expertise and enthusiasm they have learned throughout their time at MPH to bear on their Senior Capstone.

AP English Language and Composition (Grade 12)
This course aims to give 12th graders a taste of the atmosphere and rigors of a college seminar class. Our focus throughout the year is on rhetoric: What conscious or unconscious decisions do authors, advertisers, political administrations, and anonymous citizens make about how they express themselves? How do those decisions limit or liberate the power of communities to change their behavior? Students will read a variety of nonfiction texts, both contemporary and historical, that touch on topics of national and global relevance. As the year progresses, students will bring the expertise and enthusiasm they have learned throughout their time at MPH to bear on their Senior Capstone. Students will also prepare for the AP English Language and Composition exam, which will be administered in May.

Electives

First Semester

Introduction to Gaming (Grades 9-12, Zencka)
Students in this class will take a critical look at games—how they're made, how they're played, and how they shape and are shaped by the cultures around them. This class will be an interdisciplinary class in literature, sociology, philosophy, and history, as well as a gaming laboratory. This means students will analyze games as texts, as cultural artifacts, and as feats of engineering, in addition to playing and designing games of their own.

The Family Myth: Skeletons in the Closet (Grades 11-12, Strickland)
This course draws on the theories of psychology and sociology to explore the concept of family through literature and film. In psychology, the family systems theory views the family as an emotional unit and uses the idea of a system to analyze the complex interactions of a family, which lead to intense and emotional connections. We explore how the idea of the family has been celebrated in American culture and how it has changed through the years. Readings encompass theoretical texts with companion fictional works. In analyzing

the fictional works, students will use psychological terms and concepts to examine characters' motivations, actions, behaviors, and relationships.

Publications Workshop (Grades 9-12, Doyle)
With this course's focus on writing and design, students are responsible for the production of two of our three major student publications: The Pebble Magazine and thePebblemag.com. Subject matter for these publications is driven by student interest and includes a variety of genres, such as news stories, profile pieces, creative writing, and opinion pieces. In addition to producing the written content, students gain skills in the areas of interviewing, photography, layout, design, and promotion. This course may be taken multiple times.

AS More Than a Game: Sports and American Culture (Grades 11-12, Montas and Spear)
This course, which is designed for sports fanatics and people who are baffled by sports, will view sports through four lenses (gender, race, fairness, and capital) to advance students' understanding of the prominence of sports in contemporary American culture. Along the way, students will investigate several essential questions: How do our understandings of masculinity shape our perception of American sports heroes? How have sports been a site of racial progress and racial backlash? Why does a domain based on rules and fair play attract cheating and criminal activity? Who are the financial winners and losers of the game beyond the game? To explore these questions, students will read literary, historical, sociological, political, and journalistic accounts of the social and cultural dimensions of sports.

MSON Watching the Watchmen: The Role of Detective Narratives in a Carceral Culture (Grades 11-12)
Writing about the hard-boiled detective novel he helped to invent, Raymond Chandler wrote, "Down these mean streets a man must go who is not himself mean…" This course investigates the cynicism and grittiness of detectives in relation to national incarceration rates. Is this relationship coincidental, or does our national fixation with hero detectives, warrior cops, and batmen suggest something more complex at work? Students in this class will examine portrayals of crime and crime fighting in fiction and film as a way of interrogating our national culture's understanding of itself in relation to crime and policing.

Second Semester

Literature of Zombies, or BRAAIIIIINS (Grades 11-12, Zencka)
How did a slow-moving, nonverbal, technically dead monster—the zombie—become one of the most recognizable characters in our contemporary mythology? This class will examine the role of the zombie in culturally important films, stories, and novels. Does the zombie have literary precursors that prove it is saying something enduring and essential about the human condition? Or is the zombie a cultural meme born of the contemporary moment?

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AS African American Studies and the Idea of Race (Grades 11-12)
The idea of race and the experiences of African Americans have shaped the development and character of the United States. By examining cultural, historical, and philosophical aspects of African American life since the

sixteenth century, students in this course will develop an understanding of race as a social and political force in the United States. Three essential questions organize this course: Why has skin color mattered so much in the United States? Does the experience of freedom depend on restricting access to it? How has African American culture influenced American political activity? To explore these themes and questions, students will read and study the works of important writers, artists, and thinkers, including W. E. B. Du Bois, Zora Neale Hurston, James Baldwin, Jacob Lawrence, Betye Saar, Claudia Rankine, Jordan Peele, Jesmyn Ward, John Locke, Thomas Hobbes, Mary Wollstonecraft, Karl Marx, and Michel Foucault.

History

The History Department prepares students to critically examine the human condition from pre-history to the contemporary world. We foster empathy and citizenship in our students, exploring individual and group identities through a myriad of views. A particular emphasis is placed on doing the work of a historian: research, analysis, criticism, perspective, narrative, and argument. To clearly articulate our understanding, we emphasize clear, concise historical writing, all to better understand contemporary socio-political issues. MPH History students engaged in the historical process, marked by an atmosphere of respect, become informed global citizens.

Courses for Graduation Credit

History 9 - Comparative Civics and Government (Twomey-Smith)
In an increasingly interconnected world, the social contract between citizen and government has become under increasing scrutiny, where protests, activism, and civic engagement have become part of our international experience. This course provides a historical examination of various governmental systems, how those systems have changed and evolved, and the role of the citizen within these systems. Beginning with an in-depth examination of democratic governments, students will study the development of democracies in the past (e.g. Ancient Athens, Roman Republic, Iroquois Confederacy), ultimately spending time examining the US democratic system. Students will explore the ideological origins of the US political system, the shifts and changes of the system across history, and the strengths and limitations of the system today. Students will also examine the role of the individual citizen in the US system, the centrality of voting, the influence of lobbying, and the role of the media in modern US democracy. Students will also examine other modern structures of government, including the parliamentary system (UK), communist system (China), and theocratic systems (Iran). The major forms of assessment are quarterly projects that focus on a specific historical skill (research, historical writing, textual source analysis especially primary sources). These major assignments are supplemented with smaller writing projects, note-taking exercises, and oral presentations. Later in the year, students will take their conceptual understanding of government and apply it to their own independent research of a political leader, allowing them to apply the historical research, writing and critical thinking skills developed throughout the year to an in-depth research project. The goal of this course is to provide students with an enhanced understanding of civics and government, helping shape them into engaged and informed civic actors, as well as provide opportunities to develop the historical skills necessary for success throughout high school.

History 10 - Modern World History (Chhablani)
Modern World History traces the development of the modern world from the mid-fifteenth century to the present day. The goal of this class is to gain an understanding of our "modern" world through the lens of the major historical events of the recent past like the Age of Exploration & Colonialism, Enlightenment & Atlantic Revolutions, Industrialization & Imperialism, European Collapse, and the Global 20th Century. Throughout the course, students will work on synthesizing commonalities between civilizations, warfare, and cultures; evaluate current situations in historical terms; write a thesis social studies paper; and complete two long-term projects. In addition to traditional assessments, class discussions and mini projects will occur frequently.

AS Post-Classical World History (Grade 10, Chhablani)
Making the connection between history and identity, this course surveys the human condition from the post-classical era to the present. Broadly, the course examines the patterns that develop across historical periods, continuities and changes within periods, and the causal effects of major historical developments on future

events. Thematically, the course explores the development and transformation of social structures, state-building, and conflict, the interaction between humans and the environment, the intersection between cultures, and the development of economic systems both in theory and practice. Additionally, the course focuses on developing the historical thinking skills of perspective and context, periodization, argumentation, analysis, and synthesis. Although this course uses standard forms of assessment, students will also engage in class discussions and debates, write research papers, and explore history creatively through projects and multimedia presentations.

History 11 - US History through Primary Sources (Curtis)
This course examines the narrative of our national history through the lens of American primary sources, with emphasis on key moments in US history. Examining US history through the rich collection of historical documents not only grounds the student in an understanding of the narrative history of the country, but the examination of these texts develops critical thinking that inspires the student to question and historical moments they are studying. From the Iroquois' Great Law of Peace to the Federalist papers, to the Emancipation Proclamation, these seminal documents will help students navigate through the story of our nation, addressing topics such as: fundamental American political principles, the development of an American identity, the institution of slavery, growth of business, and America's role in the world during the 20th and 21st centuries. As well as textual analysis, students are expected to complete written papers of varying lengths, participate in class discussions, debates, and oral presentations.

AS The American Experience (Grade 11, Twomey-Smith)
Operating under the premise that the "language of the United States is protest," from its revolutionary origins to the modern fight for civil rights, this course provides students with an opportunity to navigate US history through social-cultural lenses. While this interdisciplinary course will investigate the social, political, economic, and cultural trajectory of the US over time, it will do so using voices that have often been marginalized in the national story, such as women, enslaved Americans, Native Americans, and immigrants. It will also examine the moments of social and political change throughout the nation's history, looking at how the founding ideals of the nation were incorporated into protest movements, and expanding inclusion into the American identity. The readings for this course will include modern historical scholarship and primary sources, which will be supplemented with American novels, poetry, photography, and film. Students will have the opportunity to produce research-based historical writing, oral presentations, and documentary filmmaking, as well as engage in college seminar-style discussions of the texts.

Electives

Full Year

AP European History (Grades 11-12, Chhablani)
Modern European history is a compendium of the European story from the Renaissance to the present. Against the thematic backdrop of European identity, students build a substantial body of knowledge on developments in European warfare, politics, philosophy, art and literature, and cultural and social change during the modern era. Thematically, the course carefully studies the interaction between Europe and the World, Europe's dichotomy in poverty and prosperity, science and religion, and individual and state expression. Students will delve into the classics from Machiavelli to Locke and Hegel to Marx. Students will also write college-level papers and complete projects using a variety of technologies. This course prepares students for the Advanced

Placement European History exam by combining the model of an intensive introductory survey course with that of a thoughtful and reflective college seminar.

First Semester

Economic Literacy: Understanding Economic Principles (Grades 10-12, Rai)
This is an introductory course in macro- and microeconomics. In simple terms, economics is the study of who makes and gets what, when people can trade with each other, and who owns what. Thus, economics can provide insight into a wide array of circumstances, such as the wage you are paid, how many iPhones will be sold in the U.S. this year, and the root causes of economic crises. Macroeconomics focuses on the big picture, the economy on a national and international scale, understanding economic systems and production. Microeconomics focuses on the choices of consumers and businesses, using the tools of economics to analyze behavior. In this course, we will focus on concepts related to supply and demand, government policy, economic theory, production, labor, and trade.

Citizenship in America: Civic Engagement and Social Activism (Grades 10-12, Twomey-Smith)
The job of the United States citizen is no easy task. While democracy empowers us to freely discuss, advocate, and act, citizens must be informed and grapple with the responsibilities of political action. In the age of tweets, blogs, and polarizing media figures, we must navigate a colossal amount of information, discern its validity, and apply it to our own personal values. This course attempts to help students do just that. After a review of the workings of American democracy, students will examine critical, contemporary U.S. issues, and citizen participation at the local, state, and federal levels. This course cultivates thoughtful, informed citizens through theoretical study and hands-on practice of engagement and activism. Experiential component provides opportunities for students to participate in activities ranging from working with veterans to challenging social injustice.

Abraham Lincoln's America (Grades 10-12, Curtis)
Abraham Lincoln lived during a period of rapid economic growth and social change in America. From the dawn of the Jacksonian period of Lincoln's childhood until the end of the Lincoln administration in 1865, discussions over slavery, abolitionism, women's rights, and territorial expansion took on consequential layers of significance. In this course, political and cultural topics will predominate, but we will also study social, military, diplomatic, and religious questions, and perhaps engage in some local history. Students will produce work in a variety of styles, from formal papers to more creative pieces, and the use of technology in graded work will be encouraged.

Model United Nations (Grades 9-12, Chhablani)
Model United Nations is a class available first semester, to any high school student, and may be taken multiple years. Students routinely enroll in MUN for all four years of Upper School. This course allows students to represent assigned countries at Model United Nations conferences. Students are required to attend a specified number of local or regional conferences. The long-term goal of the course is to produce students who are prepared to go out into the world with intellectual, psycho-social-emotional, and communicative skill sets necessary to be change agents in their communities and the world. These skills are developed as students conduct in-depth research, write position papers and resolutions from different perspectives, negotiate policy and agree on resolutions. Students learn about a host of world issues such as international economics, nuclear proliferation, the weaponization of space, biopiracy, and trafficking of women and children. During conferences, after being assigned a UN committee, students adopt the perspective of a country and must maintain this perspective while formulating their arguments and creating solutions to global issues. During the research process, students are challenged to verbalize and communicate what they are learning through debate

and public speaking. MPHMUN students learn the importance of being informed global citizens. MUN can be taken in multiple years.

AS More Than a Game: Sports and American Culture (Grades 11-12, Montas and Spear)
This course, which is designed for sports fanatics and people who are baffled by sports, will view sports through four lenses (gender, race, fairness, and capital) to advance students' understanding of the prominence of sports in contemporary American culture. Along the way, students will investigate several essential questions: How do our understandings of masculinity shape our perception of American sports heroes? How have sports been a site of racial progress and racial backlash? Why does a domain based on rules and fair play attract cheating and criminal activity? Who are the financial winners and losers of the game beyond the game? To explore these questions, students will read literary, historical, sociological, political, and journalistic accounts of the social and cultural dimensions of sports.

Second Semester

Global Citizenship: Through the Female Lens (Grades 9-12, Rai)
In the twenty-first century, networks of trade, information, and migration crisscross the globe. As a result, people make everyday choices that stem from and impact the lives of others in distant territories. Although national governments are responsible for official political decisions, globalization has politicized a host of choices that stretch beyond the recognized borders of nation-states. This course examines the roles and responsibilities of the average woman as a citizen of the world in the twenty-first century. Students will learn to inform themselves about global issues by using a variety of traditional and non-traditional media, and they will produce a diverse array of scholarship to convey their mastery of the course's skills and contents.

Museum Studies (Grades 9-12, Chhablani)
Students enrolled in Museum Studies will learn the basics of museum curation through exploring the history of MPH and studying Museum Design. MPH has a rich history dating back to 1869, when it was established as a military academy. Many of our continuing traditions, including Red and White Day and the opening day Handshake Ceremony, began at our predecessor schools. Students new to the course will engage in the practice of history exploring MPH records and artifacts. All students will then select an area of their choice to build their own exhibit. and continue the long-term project of building and maintaining a living museum for Manlius Pebble Hill. The course will have local field trips and, potentially, field trips to larger museums in cities on the east coast. Finally, we will be partnering with faculty from universities, and with alumni, to enhance our understanding of the field.

US Foreign Policy Since the Second World War (Grades 9-12, Curtis)
The class will examine the foreign policy of the United States in modern times, providing an overview of the role of the United States in the world from the entry into the Second World War to as close to the present day as is practicable. The class will focus more on the political, cultural, and diplomatic influences on actions on the global stage, rather than on strictly military history in individual conflicts. Topics will include the isolationist-interventionist debate of the 1930s; the U.S. global strategy during the Second World War; the progression of the Cold War between the Truman Administration and the 1980s (including the containment doctrine, the Marshall Plan, and events in Europe, Korea, Latin America, and Southeast Asia); the historic role of the Middle East in American foreign policy; the legacy of 9/11; and the role of the United States as a global actor in the 21st century. Student work will emphasize formal analytical papers, with the possibility for non-written submissions using graphic art, digital narrative, and oral presentations.

AS The North American City (Grades 11-12, Twomey-Smith)

This course will be an interdisciplinary examination of various North American cities, exploring the geography as well as the urban, social, and cultural history of each city. Each American city (New Orleans, Philadelphia, Baltimore, New York, Chicago, Los Angeles) will be examined as a case study, studying the historical origins of the city, the urban development of the city, as well as encountering the literary and film productions each city has inspired. Throughout the semester, the students will engage with and discuss a variety of materials and sources from each city, with the objective of understanding the socio-cultural differences of each city and the city's relevance to the broader American historical narrative. This course models many classes taught at college level now - interdisciplinary in nature, thematic in direction, and learning holistically about the interaction of history, geography, literature, and film in the United States. Field trips and travel opportunities may be a possibility.

Malone Schools Online Network

Manlius Pebble Hill School is the only school in New York State to be included in the Malone Schools Online Network (MSON), a consortium of 28 of the nation's most highly regarded independent schools. Together with our MSON partners, MPH offers students an interactive distance learning experience. Our students have access to an expanded advanced curriculum and can take course taught by other member schools – and by MPH faculty – in real time with students from across the country.

MSON FAQ's

Academic Information

- Available to Juniors and Seniors.
- Courses are comparable to, or more advance than, Advanced Placement and Advanced Studies courses.
- Courses are considered essential academic subjects (count toward 5 each semester).
- Courses are available in full-year and semester (fall and spring) options.
    - Go to https://maloneschoolsonline.org/ to view the 2022-2023 Course Catalog.
    - Course descriptions, terms, days, and times can be found in Course Requests under the MSON tab by clicking on the name of a course.
    - Hard copies of the MSON catalog, schedule, and calendar are available in the Division Office
- Courses may be dropped before the 4th class meeting.
- Courses may be added before the 3rd class meeting depending on space availability.
- Classes meet 2 times per 5-day week.
    - Class meeting times are not aligned with MPH class times.
    - Students must attend a minimum of 80% of their MSON classes.
    - Students are responsible for attending classes when MPH is not in session for reasons including, but not limited to planned school closures (Holidays, In-Service days), sports practices and games, class trips, field trips, snow days, illness.
- Students must communicate regularly with their MSON instructor, particularly regarding specific circumstances that affect participation in class.
- MSON classes that meet during the MPH school day must be attended from the designated MSON space.
- MSON classes that meet after the MPH school day has ended may be taken on a student laptop in another location outside of the MSON classroom.
- The MPH MSON Academic Liaison coordinates with the course instructors and students to arrange for taking quizzes and exams outside of class time.
    - All quizzes and exams must be taken in the College Counseling Conference Room unless otherwise directed by the course instructor.

Registration Information

- Students select MSON courses on the Course Request page on their Blackbaud account during the course selection period.
- MSON courses are included in the maximum number of courses that students may select in their Course Requests.
- Students who request MSON courses will be contacted by the MPH MSON Academic Liaison to provide additional information for enrollment in their MSON course(s).
- Enrollment in MSON courses is ultimately determined by the MSON Registrar.

- Enrollment in MSON courses must be viewed in collaboration with a student's MPH schedule.
    - A student may obtain a seat in an MSON course yet may not be able to take the course if it is determined that too much MPH instruction time will be lost; this determination will be made after the student accesses their MPH schedule.
- If taking an MSON course for the first time, students may enroll in only one MSON course.
- Students who have previously completed an MSON course may enroll in up to two MSON courses in any semester.

Mathematics

Manlius Pebble Hill math classes are multi-grade level to allow students to complete an appropriate three-year sequence of college preparatory mathematics. Most students take four years of math in Upper School. The Math Department offers two vigorous pathways for students to be invested in their study of math: one is rooted in algebraic skills and statistical analysis, and the other in theory and proof leading to the study of calculus. Whenever possible, we utilize a five-point approach to presenting material: numerically, algebraically, graphically, descriptively, and concretely (through an activity or with a picture). Teachers blend the best of traditional pedagogy with proven contemporary teaching practices, including frequent collaborative projects and open-ended investigative activities. Students are encouraged to take intellectual risks by raising questions and formulating conjectures using mathematical argument. As part of the MPH's support of writing for life, students are required to express mathematical concepts in clear, coherent prose in their math courses. Courses are designed to encourage students to embrace conceptual challenges, function independently, and enjoy delving into problem solving.

Courses for Graduation Credit

Algebra 1 S *Pre-requisite: successful completion of Math 8*

This algebra course is offered to 9th grade students interested in studying statistics and analyzing data. In this course, students pursue traditional topics of algebra: solving equations and inequalities, linear functions and graphing, systems of linear functions and inequalities, operations with polynomials, quadratic functions, and rational and irrational numbers. In addition, students pursue basic topics of statistics: linear regression, data spread, and summarizing categorical data in a two-way frequency table. The course pays special attention to algebraic manipulation skills, communication of ideas, developing the relationship between algebraic models and graphs, data fluency, and the use of the graphing calculator.

Algebra 1 C *Pre-requisite: successful completion of Math 8 and teacher recommendation*

This algebra course is offered to 9th grade students interested in studying calculus. This course is for students who enjoy delving into how and why mathematical concepts work. Students pursue a variety of topics of algebra: solving equations and inequalities, graphing functions, systems of linear functions and inequalities, operations with polynomials, quadratic functions, rational and irrational numbers, functional notation, and mathematical fluency. The course devotes special attention to problem solving skills, abstract thinking, written communication of ideas, developing the relationship between algebraic models and graphs, and the use of the graphing calculator.

Geometry S *Pre-requisite: successful completion of Algebra*

The second course in this mathematics sequence for statistics introduces students to geometric concepts. Students examine topics in plane geometry using algebra as a foundation for each unit. Euclidean geometry is introduced as an axiomatic mathematical model founded on postulates. Theorems and definitions are used to justify equations for solving problems focused on segments, angles, triangles, parallel lines, quadrilaterals, and circles. Through activities, students explore the properties of geometric shapes using hands-on explorations, including constructions with the compass and straight edge. In addition, statistical concepts will be used to summarize large data sets by reducing their complexity to a few key values that model their center and spread. Distributions will be used to analyze data sets.

Geometry C *Pre-requisite: successful completion of Algebra 1C*

The second course in the mathematics sequence for calculus is offered to students who have successfully completed Algebra 1C. This course introduces Euclidean geometry as an axiomatic mathematical model founded on postulates, and students experience its development through the proof, exploration of theorems and properties, and applications of algebra. Students focus on creating two-column proofs of properties and theorems for triangles, parallel lines, quadrilaterals, and circles. Constructions with a compass and straight edge are used to create designs and explore the properties of geometric shapes.

Algebra 2/Trigonometry S *Pre-requisite: successful completion of Geometry*

The third course in the mathematics sequence for statistics stresses algebraic manipulations, problem solving, exploring rational, radical, and quadratic equations. Students continue their study of algebraic structures, including the real number system and the development of function theory. Algebraic manipulations involving whole number, integral, and fractional exponents are examined. Trigonometric functions are introduced from the viewpoint of the unit circle, and students analyze their graphs and applications. The graphing calculator is used to explore and solve equations, to check solutions, to discover properties of functions, and to simplify calculations. Topics in probability focus on the use of conditional probability. Extensive statistics work is done to help students understand how population parameters can help to infer properties about populations.

Algebra 2/Trigonometry C *Pre-requisite: successful completion of Geometry C*

This course stresses algebraic techniques, problem solving, and exploring rational, radical, and quadratic equations. Students continue their study of algebraic structures, including the real and complex number systems. The course focuses on the theory of functions. Trigonometric functions are introduced from the viewpoint of the unit circle, then analyzed through graphs and applications. The algebraic and graphical characteristics of exponential and logarithmic functions are introduced. The graphing calculator is used to solve and check equations, and to discover the properties of all the functions studied.

College Algebra S *Pre-requisite: successful completion of Algebra 2/Trigonometry*

This course is for those students who would like further practice with algebraic manipulations and the study of functions. Topics include a review of algebraic manipulations, linear and quadratic equations and inequalities, characteristics of functions, and manipulations with linear, quadratic, and higher degree polynomial functions, rational, exponential, and logarithmic functions. The unit circle, right triangles, graphs, and applications of trigonometry are also studied. Students will pursue several topics in statistics: solve problems using permutations and combinations of compound events, use probabilities to influence decisions, summarize, represent, and interpret data on two categorical and quantitative variables. The calculator plays an integral role in discovering mathematical concepts.

Pre-Calculus *Pre-requisite: successful completion of Algebra 2/Trigonometry C*

Pre-calculus builds on the skills developed in the Upper School mathematics calculus sequence. It places a strong emphasis on problem solving. Sound manipulative algebra skills are necessary. Students analyze the relationships between numeric, algebraic, and graphic representations of linear, quadratic, exponential, logarithmic, polynomial, rational, and trigonometric functions, along with the special characteristics of each function. The graphing calculator, Calculator Based Laboratory (CBL), various probes, programs, computer software, and applications provide a variety of ways to explore and create mathematics. Algebraic proofs are discussed to provide a greater understanding and appreciation of our mathematical system in preparation for Advanced Placement and college-level math courses.

Advanced Placement Calculus AB *Pre-requisite: successful completion of Pre-Calculus*

Calculus builds on the intuitive approach of Pre-Calculus to develop the concepts of derivatives and integrals and their algebraic processes. Using derivatives to describe rates of change of one variable with respect to another or using definite integrals to describe the net change in one variable over an interval of another, enables students to understand change in a variety of contexts. The relationship between integration and differentiation as expressed in the Fundamental Theorem of Calculus is a central idea in AP Calculus AB. Using definitions and theorems to build arguments and justify conclusions are a major emphasis. This course includes comprehensive preparation for the AP examination.

Advanced Placement Calculus BC *Pre-requisite: successful completion of AP Calculus AB*

The second year of calculus covers topics unique to the Advanced Placement Calculus BC curriculum and numerous applications of calculus. Topics include vector and parametric functions and their derivatives, polar coordinates, rigorous definitions of limits, advanced integration techniques with improper integrals, and an extensive treatment of infinite sequences and series. Using definitions and theorems to build arguments and justify conclusions are a major emphasis of the AP course. The course includes a thorough preparation for the AP Calculus BC exam, including a demanding review of Calculus AB from an advanced viewpoint.

Advanced Placement Statistics *Pre-requisite: successful completion of Algebra 2/Trigonometry*

AP Statistics focuses on the analysis of data with an emphasis on observing patterns in data and the departures from those patterns. Students produce models of data using regression analysis, probability, and simulation in order to anticipate and predict patterns beyond the measured data. They observe the normal distribution and learn how to mathematically describe variations from the norm. Students study the process of sampling and sampling distributions to produce a confidence interval and to make an inference about a population based on the sample. The binomial and normal distributions provide good models for inference. Students use several tests of significance to make inferences, including the "z," "t," and Chi-Square tests. The course includes a thorough preparation for the AP Statistics exam.

Elective Courses

First Semester

Explorations in Math *Pre-requisite: successful completion of Algebra 2/Trigonometry*

Students will dive into a variety of mathematical topics typically not covered in core classes. Topics include, but are not limited to, paradoxes, proof by induction, properties of infinity, and mathematical fluency. Additional topics may be added based on the mathematical interests of the students. At the end of the course, students are expected to research a topic of interest to present to the class. *This course is also offered in the second semester, but it may be taken only once.*

Financial Algebra (Grades 10-12) *Pre-requisite: Algebra 1*

In this introductory course to personal finance and decision making, students apply what they have learned about functions to understand income taxes, credit and debt, loans, banking practices, car and home ownership, and the stock market. This course is designed to provide students a strong foundation in financial problem solving that will enable them to make informed decisions regarding matters of money and finance in their daily lives.

Probability & Statistics *Pre-requisite: successful completion of Algebra 2/Trigonometry*

This course offers a hands-on introduction to the study of statistics and probability. This course aims to give students an understanding of the main ideas of statistics, as well as useful skills for working with data and evaluating the results of studies. Topics include exploratory data analysis, experimental design, basic probability, and methods for statistical inference. Practical examples based on reliable data are used throughout the course. Students will plan and conduct experiments or surveys and analyze the resulting data.

Second Semester

Accounting *Pre-requisite: successful completion of Algebra 2/Trigonometry*

This course introduces students to the basics of financial accounting. Students learn the rules for tracking debit and credit as well as the structure and preparation of a General Journal and a General Ledger. The content of the course includes the preparation of a worksheet from which the students write a business's financial statements. Students study cash controls, the maintenance of a checking account, and various special journals to make the recording of repetitive transactions more efficient. Students will follow accounting from sole proprietorships to small businesses to large businesses to see how things change. Students will prepare year-end adjustments, write the financial statements of a corporation, and close the books at the end of a fiscal period. Students will use Google Sheets to help organize these statements.

Explorations in Math *Pre-requisite: successful completion of Algebra 2/Trigonometry*

Students will dive into a variety of mathematical topics typically not covered in core classes. Topics include, but are not limited to, paradoxes, proof by induction, properties of infinity, and mathematical fluency. Additional topics may be added based on the mathematical interests of the students. At the end of the course, students are expected to research a topic of interest to present to the class. *This course is also offered in the first semester, but it may be taken only once.*

Innovative Math with Coding *Pre-requisite: successful completion of Algebra 2/Trigonometry*

The TI-Innovator Rover helps introduce students to coding and robotics. The simple programming language is built into the TI-84+ graphing calculator and makes it easy to program the system, run it, and trouble shoot to correct or fine-tune performance. With the TI-Innovator Rover, students will roll over roadblocks to learning by experiencing – not just seeing – math. The physical representation creates an entry point to problem solving that connects math, coding, and movement. Students will learn basic coding and use their algebra and geometry skills to solve various challenges.

Performing Arts

The Performing Arts Department fosters an environment within the MPH community where students express themselves creatively through movement, music, and drama. MPH's student performers learn that creativity requires careful intellect, meaningful purpose, and thoughtful collaboration.

When the opportunity is available, we send performers into the community as members of All-County and All-State ensembles, and students have graduated from MPH to attend prestigious performance programs such as Juilliard, Boston Conservatory, NYU Tisch School, Eastman, Purchase College, and the Crane School of Music. Students participating in our ensembles and programs move forward with an increased appreciation of the arts and fond recollections of their experiences here.

Courses for Graduation Credit

1 credit alone or in combination with Visual Art and Design.

First and Second Semester

(Selecting 2 semesters of ensemble classes is preferred for continuity and development.)

Music Ensembles: Band, Orchestra, and Vocal Ensemble (Grades 9-12)
Music ensembles present an opportunity to study and perform music literature while experiencing the joy and love of music. Students will explore a variety of musical styles and genres, develop overall musicianship, and build teamwork amongst one another. Each semester will conclude with a performance. In addition to rehearsals during class time, students will have one group lesson per 8-day cycle during tutorial to continue building individual skills and do sectional work. Students may take both an instrumental ensemble (band and orchestra) and Vocal Ensemble at the same time but will split the music block and credit between the two groups. Playing experience and a playing proficiency of at least a NYSSMA Level II are prerequisites for Band and Orchestra enrollment. New players may participate in a tutorial lesson group to prepare for future enrollment in an instrumental ensemble. Students are encouraged to be members of performing ensembles in consecutive semesters and over multiple years to continue developing their overall musicianship and the ensembles as groups.

Theatre Practicum (Grades 9-12, Dwyer)
Theatre Practicum is open to students participating in the Upper School Play (Fall) or Upper School Musical (Spring). Students will have the opportunity to conduct more in-depth rehearsals and analyses of the show exploring multiple production elements of theatrical production. Works will be studied from a historical and literary perspective to provide a deeper understanding of the piece.

Stagecraft (Grades 9-12)
Stagecraft explores components of stagecraft for theatrical production (including scenery, lighting, costume, and sound) and how they are designed and utilized safely in the theatre. In addition, the course enhances the collaborative process of production through the planning, design, stage management, and stage crew support for MPH productions. These productions include the Middle and Upper School plays, musicals, and dance concerts. This course may be taken more than once so that students can continue developing advanced skills.

First Semester

Acting (Grades 9-12, Dwyer)
Acting is a hands-on exploration of and introduction to the performer's creative process. Students in this class will learn about the history of acting techniques, develop fundamental acting tools, and build confidence. Students will gain an understanding of their unique tendencies and strengths as individual performers through games and practical exercises while building trust as an ensemble. In addition, students will study diction, projection, and memorization techniques that they can apply to theatre, class presentations, public speaking, and more.

Dance Composition and Performance (Grades 9-12, Dwyer)
Dance Composition and Performance explores dance as a performing art and medium for artistic expression. The curriculum includes movement technique classes, improvisation, and the choreographic process, culminating with the Annual Student Choreography Concert. Student choreographers use class time to discover their unique style, develop choreography, conduct rehearsals, and learn elements of production planning. Students receive Performing Arts or Physical Education credit for this course. No prior dance experience is necessary for participation. This course may be taken more than once so that students can continue developing their skills.

Introduction to Music Theory and Keyboard (Grades 9-12)
Introduction to Music Theory and Keyboard develops an understanding of the fundamentals of music theory through learning keyboard skills. While studying music theory, students will apply their knowledge to learn basic keyboard techniques, harmonize songs with chords, and learn beginning piano repertoire. This course is a prerequisite to Music Theory I for both new musicians and experienced musicians who wish to have an introduction to playing the piano. This is an essential academic course and counts as one of the five essential courses each Upper School student must enroll in per semester.

Second Semester

Dance History and Repertory (Grades 9-12, Dwyer)
Dance History and Repertory introduces the legacies of great dance companies and choreographers of the 19th through 21st centuries. Students deconstruct and study original historic choreography, recognizing and understanding the unique styles originated by dance icons. The semester culminates with the annual Repertory Dance Concert. Students receive Performing Arts or Physical Education credit for this course. This course may be taken more than once so that students can continue developing their skills.

Music Theory I (Grades 9-12)
Music Theory I examines the inner workings of music through an in-depth analysis of rhythm, melody, harmony, notation, and compositional techniques. Students develop aural skills through the rudiments of sight-singing and melodic, rhythmic, and harmonic dictation. The study of music theory promotes the development of overall musicianship and a greater appreciation and enjoyment of music. Fluency in music reading is a prerequisite for this course. This is an essential academic course and counts as one of the five essential courses each Upper School student must enroll in per semester.

Advanced Course

Full Year

Advanced Recital (Grades 9-12)
Advanced Recital is an opportunity for instrumentalists and vocalists to prepare twenty to thirty minutes of solo or chamber music at a shared recital in the Spring. Advanced Recital students will meet twice a quarter to plan repertoire, discuss practice techniques, and present their work to their teacher and peers for critique. Before the recital performance, students will participate in a recital jury where they play their program for the music faculty for a formal evaluation. A commitment to practicing five hours a week is required for this course.

Science

The Manlius Pebble Hill Science Department believes students, in order to be informed members of our global community, must achieve a scientific literacy enabling them to weigh disparate ideas, facts, and opinions before making ethical decisions. Recognizing such competencies as a set of thinking skills, the department is committed to hands-on and inquiry-driven learning that allows students to experience the natural world first-hand. Rather than present facts about the world, we teach students first to formulate questions from their own observations and then to answer their own questions in a systematic way.

At MPH, science is presented as an open-ended process. Opportunities are available for students to work both individually and as part of a team to develop the skills to test questions using the scientific process. That process involves researching a question, designing and carrying out an experiment, solving problems, analyzing data, drawing conclusions, and communicating findings. In this way, the study of biology, chemistry, and physics builds a foundation of lifelong learning.

Courses for Graduation Credit

Biology (Grade 9, Bonacorsi)
Introductory topics include biological chemistry, cell biology, genetics, evolution, ecology, the diversity of living things, and human biology. Unifying themes stressed throughout the year are evolution, energy transfer, the relationship of structure to function, interdependence in nature, and regulation. Laboratory activities help students to understand that science is a process, and to develop important skills in scientific expression and qualitative and quantitative analysis. Biology challenges students to think critically in order to understand the larger significance of the life sciences.

Chemistry (Grade 10, Osborne)
This introductory course covers the basic concepts of inorganic chemistry. The major units are: matter and energy, atomic structure, the periodic law, chemical bonding and reactions, stoichiometry, solutions, gases, and the reactions of acids and bases. The course encompasses both the conceptual aspects of chemical theories, and the application of mathematical formulas to the course concepts. Involving both quantitative and qualitative methods, laboratory exercises reinforce the course content and allow hands-on experience with each of the topics.

Physics (Grades 11-12, Magagnoli)
Physics is a rigorous, in-depth study of physical phenomena. The topics covered include vector analysis, mechanics, electricity, magnetism, waves, optics, heat, thermodynamics, and modern physics. Physical problem solving is emphasized throughout the course, and laboratory investigations reinforce concepts and develop analytical skills. Because the course is highly mathematical and requires familiarity with algebra, trigonometry, geometry, and graphical analysis, students must have completed Algebra II/Trigonometry or the equivalent before enrolling in Physics. Physics students must be concurrently enrolled in an advanced math class such as College Algebra S, Pre-Calculus AC, or AP Calculus.

Advanced Placement Physics C: Mechanics (Grades 11-12, Magagnoli)
The Advanced Placement Physics C course forms the first part of the college-level sequence that serves as the foundation in physics for students intending to major in the physical sciences or engineering. Strong emphasis is placed on solving a variety of challenging problems, many requiring calculus. The primary emphasis of Advanced Placement Physics C is on Newtonian mechanics. Use of calculus in problem solving, derivations, and formulating principles increases as the year progresses. Topics include the laws of motion; work, energy, power, and conservation of energy; momentum; rotation and rolling motion; simple harmonic motion; and gravitation. AP Physics is taught as a first-year college course; although prior enrollment in physics is not required, enrolled students must have the approval of the Advanced Placement Physics instructor.

Advanced Placement Chemistry (Grades 11-12, Osborne)
This college-level course emphasizes chemical calculations and the mathematical formulation of principles. It also emphasizes the development of the students' ability to think clearly and express ideas with clarity and logic in essays, in calculations, and in oral communication. Topics include atomic theory, stoichiometry, thermochemistry, gas laws, kinetics, solution equilibria, qualitative analysis, acids and bases, oxidation-reduction, electrochemistry, and an introduction to organic and nuclear chemistry. All students will take the College Board Advanced Placement exam in chemistry.

Advanced Placement Biology (Grades 11-12, Yeager)
Advanced Placement Biology is the equivalent of the general biology course usually taken during the first college year. Topics include biological chemistry, cells, energetics, heredity, molecular genetics, evolution, and ecology. The course aims to provide students with the conceptual framework, factual knowledge, and analytical skills necessary to deal critically with the rapidly changing science of biology. All students in the course will take the College Board Advanced Placement exam in biology. Prerequisites include the successful completion of Biology and Chemistry.

Elective Courses

Full Year

Advanced Placement Physics C: Electricity & Magnetism (Grades 11-12, Magagnoli)
Advanced Placement Physics C: Electricity & Magnetism provides a thorough grounding in the laws of static and dynamic electric and magnetic fields. It forms the second part of the college-level sequence that serves as the foundation in physics for students intending to major in the physical sciences or engineering. Differential and integral calculus are used throughout the course. Topics include electrostatics, electric fields, Gauss's law, electric potential and potential difference, capacitance, Ohm's law, circuits, Kirchhoff's rules, sources of magnetism, Ampere's law, induction, Faraday's law, and Maxwell's equations. Successful completion of Advanced Placement Physics C: Mechanics and the instructor's permission are required to enroll in this course.

First Semester

Astronomy in a Nutshell (Grades 10-12, Magagnoli)
This course will be an introduction to modern astronomy. Topics include the life and death of a star, the formation and evolution of galaxies, as well as a brief history of the Universe. How did our home planet, solar

system, and galaxy come to be? And are there others like it? We will also discuss the methods and techniques astronomers use to study the Universe, both today and throughout the history of Astronomy.

Counting Sheep: The Neurobiology of Sleep (Grades 11-12, Foster)

If I fall asleep now, I will get six hours of sleep. That will be okay.

If you have considered a similar sentiment, join this class and learn why your body must sleep and sometimes struggles to reach deep sleep. That is, what does sleep accomplish and what challenges our need to sleep? It turns out the phrase "lemme sleep on it" has neurological underpinnings. Worms, some fish, mammals, birds, reptiles, and amphibians all need sleep, just like you. We will tease apart the neurobiology of sleep, examine its wide application across the arts, sports, the economy, and other fields, and improve your capacity to catch some of those critically needed zzzzzzzzzzz's.

Canine Cognition (Grades 10-12, Bonacorsi)
Dogs are among the very first animals to be domesticated by humans. This course will introduce you to the study of canine cognition and behavior and the latest research on how dogs think, learn, and feel. You will learn to apply concepts like perception, learning, cognition, and emotion, which are typically applied to humans, to dogs. Topics covered include evolution, neurobiology and perception, behavior, research methodologies, learning, theory of mind, and emotion. Prerequisites include successful completion of 9th grade Biology.

MSON Genetics & Genomics (Grades 11-12, Yeager)
This course will emphasize classic Mendelian genetics, molecular genetics, and population and evolutionary genetics. The topics include structure and function of genes (and the genome), biological variation, and regulation of gene expression. Subsequently, the course will explore current genome analysis methods, and genome manipulation technologies such as CRISPR. We will also discuss the implication of our use of this information in society. Topics include recombinant DNA technology, mathematical models, and statistical methods for data analysis. Papers from the current and classic literature will supplement lecture materials.

Second Semester

MPH Goes CSI - Forensic Science (Grades 11-12, Foster)
Have you ever wondered how DNA can be manipulated to prove guilt or innocence? Did you know that lipstick left on a glass can be evaluated and then linked to a specific brand and, perhaps, person? Are you interested in learning how to lift fingerprints left on an object? This forensic course will apply some new and some well-established lab techniques to the evidence left at a staged crime. The course is a series of experiments that lead a team of investigators to decide upon a possible perpetrator from a field of suspects. The final project involves solving a crime staged in the classroom with faculty serving as suspects.

Computational Physics (Grades 10-12, Magagnoli)
This course will be an introduction to computational physics, the science of using computers to study the world and universe around us. We will be using Python to model various physical systems, such as the way a burger cooks on a grill, to explore the physical laws that govern them. We will learn how physicists use computers to process large amounts of data and extract useful information from them. We will also investigate chaotic systems, or systems that have to be studied one step at a time, and learn how computers can help us to visualize and explain otherwise complex problems. Have you ever wondered what would happen if you replaced the pendulum on a grandfather clock with a spring? That is just one of the systems we will model using chaotic

dynamics. Emphasis will be placed on learning to use computational programming as a tool for problem solving and data analysis.

500 Million Years of Land Plants (Grades 10-12, Bonacorsi)
This course will take you on a journey through time to view the history of land plants through the lens of three main themes: evolutionary relationships among extant and extinct plant groups, structural innovations in land plant bodies (with a particular focus on complex reproductive strategies), and interactions among plant communities, geology, and climate. We will learn about the fossil record of terrestrial plants, what the ecosystems they built looked like through time, and how the earths of the past differed from the green planet we live on today. Prerequisites include successful completion of 9th grade Biology.

Venom, Toxins, and Poisons! Oh My! The Biochemistry of Neurotoxins (Grades 11-12)
Poison dart frogs, ominous mushrooms, stinging nettle, and snake bites. How do these organisms produce such concentrated chemicals, and how do these chemicals work to have such an impact on the human body? In this course, we will discuss the concepts of biochemistry, cell signaling, and structure and function of the nervous system. We will then examine how the chemical structure of toxins and medicines affect these systems to produce the physical symptoms present, with examples from all different taxa including fungi, plants, animals, and bacteria. We will also examine the historical and cultural use of these toxins and medicines over time.

Independent STEM Projects (Grades 9-12, Foster)
The Science Department offers the exciting opportunity for students to continue the thread of independent science research started in Middle School through to their Upper School years. The Department designed a timeline and benchmarks to support interested students in their quest to complete independent STEM fair projects culminating with participation in the MPH and Central New York Science and Engineering Fairs. Interested students enroll in the third quarter class and meet on an as needed basis with a mentoring member of the Science Department. Over the years, participating Upper School students have enjoyed great success with their independent science research.

Visual Art and Design

The Visual Art and Design courses are built on a foundation of five key pillars that encourage students to be intelligent, independent, and creative thinkers and makers who are unafraid of creative artistic risk. Aspects of these pillars inform each class.

***Intelligent and Technical Aesthetic Decision Making*:** Students are trained to create and understand technically strong and visually striking work with an emphasis on craftsmanship.
***Understanding Their Creative Process*:** Based in metacognitive practices, students are challenged to understand, critique, and improve their actions and decisions during their creative process.
***Articulate Visual Communication*:** Students learn to use Art and Design as modes of communication and to consider how and what their work communicates. Students strive to be articulate visual communicators.
***Individual Experimentation*:** Student are provided with the encouragement, opportunity, and support to experiment and create based on their own interests, skills, and creative pursuits. They are encouraged to take creative risk, try something new, and play.
Community: Students are encouraged to be a part of the larger MPH Art community and connect with peers who can help them further their artistic learning.

Courses for Graduation Credit

1 credit alone or in combination with Performing Arts.

First Semester

Introductory Courses

Introduction to Photography (Grades 9-12, Henderson)
This class introduces students to the basic technological, compositional, and editing skills necessary to be a successful photographer. Through a series of games and photoshoots, students learn everything from shooting in manual and decisive moment, to influential photographers and designing a photo shoot. Students frequently collaborate with one another to generate ideas and craft photo shoots. The primary learning is centered around control of the camera, understanding of light, value and composition, collaborative skills, and building creative confidence. In addition, students gain a strong working knowledge of Adobe Photoshop. This is a very active class, and students will frequently engage in activities that require considerable movement. Students would benefit from access to personal cameras, but they are not required. This class is highly recommended as a basis to further studies in Art and Design.

Elemental Studio (Grades 9-12, Henderson)
Elemental studio is a 2D (two-dimensional) intensive class that deeply dives into technical skills and idea generation. Through a series of exercises and projects, students build their speed, confidence, and quality of art production. The primary learning for Elemental Studio is the development of technical skills and an introduction to reflection. Students are provided with the opportunity to experiment with different mediums and materials. Major assignments are student driven with a significant element of critique and reflection.

Students are introduced to the art elements, design principles, and post-modern art principles. This class is highly recommended as a basis to further studies in Art and Design. Can be taken multiple times.

Introduction to Design (Grades 9-12, Henderson)
Students are introduced to the basics of design and design thinking. Students are challenged to creatively solve problems and create useful or desirable products. Students work collaboratively as a design team to find and solve unique problems with the end user in mind. Students do everything from build a boat or sled, to walk on water, to design and sell t-shirts. The primary learning is rooted in design thinking and collaborative problem solving. This is a very active class and students will frequently engage in activities that require considerable movement and collaboration.

Advanced Course

Portfolio & Supplemental Preparation (Grades 11-12, Henderson) *Prerequisite other Visual Arts Classes*
Portfolio preparation is <u>not</u> just for students who are looking to go into a creative field. This class is an opportunity for non-visual arts major students to create supplemental materials for college applications, and for students looking towards a creative field to generate a powerful and articulate body of work to submit with their applications to visual art programs and schools. Students will regularly get feedback on their work from professors and college admissions officers. Students will attend National Portfolio Day, focus on the professional aspects of creative fields, learn to document their work, and how to professionally present themselves and their art. This class is independently driven and is an opportunity for students to dive into their creative process and interests. The class molds itself to fit the students individual needs. Can be taken multiple times.

<u>Second Semester</u>

Introductory Courses

Installation, Collaboration, & Large-Scale Sculpture (Grades 9-12, Henderson)
This course will teach students a variety of sculpture and 3 dimensional techniques, from mold making, to papier-mâché, to found objects. Students will create immersive installation work that engages all the senses. They will create work that requires viewer interaction and Art that impresses with scale and intricacy. Students will work both independently and collaboratively and focus on how the viewer experience art. Can be taken multiple times.

Advanced Courses

Design 2 (Grades 9-12, Henderson) *Pre- requisite: Intro to Design*
Design 2 builds on the foundation set in the coursework of Introduction to Design. Students will act as design professionals and a design collective to solve real-world needs. This course will be an exciting mix of tackling fun design challenges, working on real world projects, and building professional business skills. Can be taken multiple times.

Elemental Studio 2 *Pre- requisite: Elemental Studio or permission from teacher*

Elemental Studio 2 builds on the foundational techniques learned in other introductory classes. This class will give students the space and opportunity to dive into deeper learning and practice a particular technique that interests them. Students will focus on developing positive and productive studio habits, careful critiquing, and finding a medium that they can feel confident in. Students will also work with the Post-modern art principle. The majority of the projects will be student driven and it is a wonderful opportunity for students to take creative risks. Can be taken multiple times.

Photography 2 *Pre-requisite: Introduction to Photography*

Photography 2 builds on the foundation of Introduction to Photography. Students dive deeper into camera control, editing, controlling the quality of light, and photoshoot design. In addition, students will learn studio lighting, how to use professional grade equipment, and how to measure light to make the best aesthetic decisions to fit their idea. The class will also create larger photographic series with an emphasis on both concept and technique. Students will practice careful editing and have ample opportunity for creative experimentation. This is a very active class and students will frequently engage in activities that require considerable movement. Students would benefit from access to personal cameras, but they are not required. Can be taken multiple times.

World Language

At MPH, we believe that proficiency, and ideally, fluency, in a world language is the gateway to global citizenship. We value the study of languages not only for the immediate practical benefits, but also for the way in which learning a new language enables the student to learn a new culture, and thereby see their own more clearly. MPH offers instruction in French, Latin, Mandarin Chinese and Spanish. Students often pursue their language of choice through the most advanced courses, and over the years, many also have taken advantage of our international travel and immersion programs.

Small classes are essential to MPH's excellence in language instruction. Students are immersed in the cultural products of the countries whose language they are studying. They may do as the Romans did, prepare a Spanish meal, read a French magazine, or watch a Chinese film. Because the study of a world language entails a progressive acquisition of linguistic skills, our program is intentional in its vertical articulation. Our students' progress over time from beginners to truly fluent speakers and connoisseurs of the culture, and many choose to master more than one language.

Graduation Requirement

Every student must take at least three years of a world language in the Upper School and complete one language to Level III (or its equivalent). These graduation requirements are supported by level I – IV instruction in French, Latin, Mandarin Chinese, and Spanish.

Advanced Courses

French

French IV (Leclercq)
French IV is an advanced level French-language class that will challenge students to understand and communicate in the French language with sophistication, as well as to develop an appreciation for the cultures composing the Francophone world. French IV provides a path towards intermediate-high proficiency in the communicative skills of listening, speaking, writing, and reading. The course will emphasize the use of the French language in oral communication, and support students develop the ability to speak and understand the language in a variety of contexts. Through research, readings, and presentations, students will learn how to address the breadth of human experiences throughout the Francophone world. Students will read articles and excerpts from magazines, newspapers, websites, and literary texts. They will also listen to podcasts, radio segments, conversation recordings, songs, and watch short movies, interviews, documentaries, and news clips. This course is for students who have successfully completed French III.

Current Issues in the Francophone World (Leclercq)
This immersive conversation course will explore the breadth of the Francophone world and introduce students to its many cultures. With daily exposure to authentic articles, video clips, films, radio segments, songs, and social media, students will be invited to discuss, write about, research, and present on current issues and perspectives in the Francophone world. For students who have successfully completed level IV.

French Literature (Leclercq)
In this immersion course, students will learn about French history and culture from the Middle Ages to the present, read and discuss excerpts of francophone literature, and watch films that illustrate our class conversations. We'll explore all literary genres: poetry, novels, tales, philosophy, theatre, letters in their socio-political, artistic, and technological context from the times of the crusades to the present. For students who have successfully completed level IV.

Latin

Advanced Latin Literature (O'Malley)
The Advanced Latin Literature course is designed to develop skills in reading Latin passages from Catullus' and Horace's lists of works. Skills include the ability to translate, analyze, interpret, read aloud, and scan the meter appropriate to the text. The course places a strong emphasis on the historical, social, cultural, and political context of their poetry. Also, students learn how Latin literature has influenced the art and literature of the modern world and culture.

Vergil and Caesar: The Literature of Empire (O'Malley)
This course's goals are to develop the students' abilities to translate the required passages from Caesar's *De bello Gallico* and Vergil's *Aeneid* into English, to help them understand the context of the written passages (including the political, historical, literary, and cultural background of each author and text), and to help them understand the reasons behind the particular style of writing and the rhetorical devices employed. The course also helps students to be successful in analyzing Latin passages and in understanding how and why the author uses the language in a particular way and the effects he is hoping to produce.

Ancient Greek (O'Malley)
Ancient Greek introduces students to the rudiments of Attic-dialect grammar, syntax, vocabulary, and accents of Greek words. Class time is spent on the explanation of grammar, short practice exercises, translation from Greek to English and from English to Greek, and on the discussion of student work. The course uses the reconstructed pronunciation and devotes additional time to the study of Greek culture. Students must have completed Advanced Latin Literature or receive permission from the instructor.

Mandarin Chinese

Beginner's Mandarin Chinese (Kuo)
Beginner's Mandarin Chinese is designed for students who have no previous or little experience with the Chinese language. The course introduces the fundamental principles of the Chinese language: tones/phonetics, a character-based writing system, and grammar. The emphasis is on easing students into reading, writing, speaking, and listening skills necessary for basic interaction and conversation in the Chinese language. Language learning is facilitated through projects, cultural enrichment activities, multimedia presentations, and field trips.

Intermediate Mandarin Chinese (Kuo)
Intermediate Mandarin is designed for students who have completed Beginner's Mandarin or have demonstrated competency in basic Chinese language skills. Intermediate Mandarin helps students construct and engage with longer and more complex language structures. Students will build on interpretive modes of communication and practice using those skills in personal and professional scenarios. Course topics will also introduce students to literary knowledge and cultural perspectives embedded within the Chinese language. By

the end of the course, students will be able to write in a short essay format and perform short monologues in Chinese.

Spanish

Spanish IV (Medina-Dooher)
This course is an intensive immersion language course designed with an emphasis on the interpersonal, interpretive, and presentational modes of communication. The students will develop the ability to analyze and compare the diverse Spanish and Latin American Cultures with daily readings and guided writing practice. Some of the topics discussed will be global challenges, science and technology, contemporary life, personal and public identities, families and communities, and beauty and aesthetics. Students will be introduced to idiomatic expressions of the Spanish language and will continue to refine their pronunciation and comprehension by participating in class discussions, preparing rehearsed speeches, and participating in debates. A variety of Spanish *realia*, as well as historical and cultural topics, are used to increase the depth of student appreciation of the Spanish culture. Contemporary authentic Spanish news, video clips, and Podcasts are used to engage in advanced language discussions. This course is for students who have successfully completed Spanish III.

Spanish Cinema and Theater (Medina-Dooher)
This Spanish class is an immersion course designed to further develop students' abilities in the three modes of communication: interpersonal, interpretive, and presentational. The students will analyze and compare different genres of theater, film, and documentaries of the 20th- and 21st-century. Students will research, analyze, compare, and reflect on social issues, fashion, food, social media, and music. They will also gain an understanding of how all the twenty-one Spanish-speaking countries are connected by the Spanish language and still preserve their own unique culture and identity. Students will lead discussions on the meaning of being a global citizen, current issues and trends of the Spanish-speaking world and analyze how technology is transforming cultural traditions and identities, specifically with the use of social media. In this course, the students will produce videos in a variety of genres; for example, commercials, horror video clips, short plays, video stories, short movies, and critiques of films that have been discussed in class. This course is for students who have successfully completed Level III.

AP Spanish Language and Culture (Medina-Dooher)
Advanced Placement Spanish Language and Culture is a course designed for fifth-year students who have demonstrated intermediate-high proficiency in the three modes of communication, interpersonal, interpretive, and presentational. Students will continue to advance their studies of Spanish-speaking cultures and develop a deeper analysis of the topics presented. The students will plan, prepare and present a variety of assignments about cultural and historical topics. Students will present a variety of projects to express their views as global citizens. This course prepares students to collaborate, construct and produce work in formal and informal settings with peers, and other Spanish-speaking professionals. The students will focus on topics like global challenges, science and technology, contemporary life, personal and public identities, families and communities, and beauty and aesthetics. Students in this course are expected to be prepared and fully engage and lead the discussion in global citizenship and current issues in Latin America and Spain. The students will support their opinions with their research as well as material presented in-class lectures.

Elective Course

Second Semester

West Meets East: A Comparative Cultural Perspective (Grades 10-12, Kuo)
This survey course on East Asia introduces students to regional culture, economics, and politics. Students will learn through comparative case studies, reflecting first on what they know about their own customs and values, and then applying those insights to examine the traditions and aspirations of people in China, Japan, and South Korea. Our case studies will contrast many terrains—including the hip (American vs. Korean pop), the lucrative (Amazon vs. Alibaba), and even the savory (burgers vs. sushi)—and our discussions will aim to build bridges by focusing on commonalities in language, markets, and geography. This course does not have any prerequisites, but students with a regional language background are encouraged to enroll.