

# UPPER SCHOOL CURRICULUM GUIDE

2023-2024 ACADEMIC YEAR

— 1785 —

# MFS

Moorestown  
Friends School



# INTRODUCTION

At Moorestown Friends School, we balance a commitment to a liberal arts education with opportunities for students to explore areas of interest and passion in greater detail and depth, particularly in the 11th and 12th grades. This description of Upper School courses and requirements is published to help students and their families both choose courses for the upcoming year and have a sense of potential paths of study over the course of one's time in the Upper School.

We recognize that the education each graduate experiences is unique, and encourage students and families to reach out to their advisor and/or teachers with whom they have developed a strong relationship to consider the range of options they may pursue on their path toward graduation. Every effort has been made to articulate the curriculum precisely, yet terminology, requirements, and variations mentioned in this guide can be complicated. If, for any reason, a student and their family has questions about courses or expectations listed in this document, they should contact the student's advisor, the relevant department chair, or the Upper School director for clarification.

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## OVERVIEW OF THE CURRICULUM

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### GRADUATION REQUIREMENTS, GRADES 9-12

In order to graduate from MFS, students who are enrolled for four years in the Upper School must enroll and earn passing grades in:

- Four years of English
- Three years of History
- Three years of Mathematics
- Three years of Science
- Two years of World Language up to level three or beyond in one language
- Minor course requirements as outlined in the "Minor Courses" section of this document



# OVERVIEW OF THE CURRICULUM

Except in the instance of a student who joins the Upper School community after 9th grade and is transferring completed course work from their prior institution, Moorestown Friends only grants credit for coursework completed outside of the school in exceptional instances. Additionally, graduation requirements may be altered for students who join the Upper School community after the 9th grade depending on the nature of the program in which a student was previously enrolled.

## MAJOR COURSES

Students generally enroll in five “major” courses per term. Major courses tend to be semester or year-long courses in the English, History, Mathematics, Science, and World Language Departments. However, especially for 11 and 12th grade students, major courses are also available in the Arts and Computers and Technology Departments.

## MINOR COURSES

Minor courses represent a unique aspect of the Moorestown Friends academic program. Meeting for approximately half the time of major courses each week, minor courses are offered across all departments, and our offerings also include interdisciplinary minor courses. At the discretion of the instructor, these courses are offered for a grade or on a pass/fail basis. The minor course offerings vary slightly each semester and a current minor course catalog is shared with students each semester before the minor course selection process begins. Students are required to enroll in two minor courses each semester. An exception to this rule is made for seniors with two AP courses, who may elect only one minor course. Students must take and pass the following minors for graduation:

- New students: Computer Applications
- Grade 9: Quakerism, Peer Leadership
- Grade 10: Leadership in the Quaker Dimension
- Grade 11: World Religions
- (2) courses in visual or performing arts
- (1) course in technology

[FALL 2023 MINOR COURSE CATALOG](#)

[SPRING 2023 MINOR COURSE CATALOG](#)



# OVERVIEW OF THE CURRICULUM

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## PHYSICAL EDUCATION AND HEALTH

Students must take Health one quarter per year and Physical Education the other three. Students in 10th grade take Drivers Education instead of Health.

## INTENSIVE LEARNING

Successful completion of the annual Intensive Learning program in March is required of all students. Intensive learning is a six-day program that enables students to engage in group-oriented, out-of-the-classroom learning. Recent programs have included: Service Learning in Costa Rica, South Jersey Service, Blacksmithing, Multicultural Philadelphia, Language Study in China, and Belize: Ruins, Rivers and Rainforests, among others. More information about the Intensive Learning program [can be found on the MFS website.](#)

## SENIOR PROJECT

Seniors are required to design and carry out an independent program of personal learning, usually off-campus, during a four-week period in May. Occasionally a student in serious academic difficulty will be asked to forgo this project and remain on campus to complete academic work.

## SERVICE REQUIREMENT

Service emerges directly from our Quaker values. In order to graduate, students must engage in a minimum of 50 hours of volunteer service during their Upper School years. This service should be completed in no more than two or three areas. Ideally students will concentrate their efforts on one area or placement. Students are welcome to suggest service activities. The Upper School service-learning coordinator helps students find service placements and certifies completion of this requirement. Students document their 50 or more hours by the start of Spring Break of senior year. In addition, seniors also complete a reflection exercise, which completes their requirement.

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*“The search for truth,  
which begins in  
contemplation, finds  
expression in action.”*  
- Robert Lawrence Smith  
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# OTHER FEATURES OF THE CURRICULUM

In grades 10, 11 and 12, students may begin to pursue special interests. We design programs that are tailored to students' strengths, interests, and long-term goals.

## HONORS AND ADVANCED PLACEMENT (AP) COURSES

The academic program at Moorestown Friends School presents opportunities for students to participate in Honors/AP coursework in Computer Science, English, History, Math, Science, Studio Art, and World Languages. These courses are an integral part of the developmentally appropriate opportunities that are presented to students at MFS. Importantly, they afford the chance for students to embrace right-sized challenges in a manner that helps to develop the competencies and characteristics that are the foundation on which future growth and success is built while also increasing content knowledge in a specific discipline. To this end, we take very seriously our consideration of a student's preparedness for Honors/AP coursework.

## DETERMINATION OF PLACEMENT

Students seeking placement in Honors/AP courses should have a demonstrated track record of deep engagement in their prior courses in the discipline as well as a demonstrated mastery of the prerequisite coursework and the skills, competencies, and dispositions that will support their successful engagement with increasingly advanced skills and content in the discipline. Year-end grades in a prior course are an important marker of student preparedness for Honors/AP courses. Across all disciplines, students who have earned a cumulative grade below 87 in a CP course or below an 83 in an Honors/AP course are not eligible for Honors/AP courses in that discipline the following year. However, in a number of instances, the cumulative grade is only one factor in the determination of student placement. The next section of this document outlines the specific process utilized by each department.

## COMPUTER SCIENCE

### **(Honors/AP coursework available beginning in 11th grade)**

To be considered for AP Computer Science, students must sit for a placement test which assesses their knowledge of Java. Satisfactory performance on the assessment is a prerequisite for enrollment. Students who are interested in AP Computer Science are encouraged, but not required, to enroll in the Intro to Java minor course. There is no prerequisite for Honors/AP Computer Science Principles.

## ENGLISH

### **(Honors/AP coursework available beginning in 11th grade)**

To be considered for AP English or for the honors designation in 11/12 seminars a student must have maintained an 87 or above in their prior CP English course or an 83 or above in their prior Honors-level seminar. Eligible students then must sit for the placement process that includes a writing sample (Honors) or writing sample and completion of a sample AP exam section (AP Literature). Departmental recommendations are also considered as a part of the placement process.



# OTHER FEATURES OF THE CURRICULUM

## HISTORY

### **(Honors/AP coursework available beginning in 11th grade)**

To be considered for Honors/AP courses, a student must have maintained an 87 or above in their prior CP history course or an 83 or above in their prior Honors/AP course. Eligible students then must sit for the placement process that includes a course-specific assessment (Honors) or writing sample and completion of a sample AP exam section (AP US History and AP Psychology). Departmental recommendations are also considered as a part of the placement process.

## MATH

### **(Honors/AP coursework available beginning in 9th grade)**

To advance into the honors track or complete a summer math course (if already in the honors track), students must have the permission of the department and earned an 87 or better in their previous Algebra-based CP math course or 83 or above on previous Algebra-based Honors math course. Upon completion of summer work, students must earn an 87 or better on the department exam given before the start of school. Exams are administered in late August or early September. Students should note that they may not advance in math and prepare for AP Biology in the same summer. To enroll in AP Calculus AB, students must earn an 83 or better in Honors Precalculus and an 87 or better on the placement test administered at the end of the year.

## SCIENCE

### **(Honors/AP coursework available beginning in 9th grade)**

To be eligible for Honors/AP courses, students must have maintained an 87 or above in the prerequisite CP science course or an 83 or above in the prerequisite Honors/AP course. Additionally, some Honors/AP courses in the discipline require completion or concurrent enrollment in a specific math course. Students interested in taking AP Biology as their first biology course are an exception to this policy. In those instances, students must have earned a 90 or above in the prerequisite CP science course or an 87 or above in the prerequisite Honors/AP course and will be required to satisfactorily complete summer work. Students should note that they may not advance in math and prepare for AP Biology in the same summer.

## STUDIO ART

### **(AP coursework available in 12th grade)**

To be considered for AP Art & Design, students must have completed Studio Art 1 with a cumulative grade of 87 or above in that course. Students will be required to enroll in a Studio Art Lab minor course concurrently which are offered in all minor blocks. For the 2023-2024 school year only: students wishing to pursue exemption from the Studio Art 1 prerequisite must submit a portfolio of 5-10 artworks and sit for a writing sample. Artworks should be finished pieces and sketchbook work that demonstrate practice, experimentation, and revision in addition to a high level of technical skill and craftsmanship. Departmental recommendations are also considered for those wishing to secure an exemption.



# OTHER FEATURES OF THE CURRICULUM

## WORLD LANGUAGES

### (Honors/AP coursework available beginning in level III)

To be considered as a candidate for Honors/AP courses, students must have a cumulative grade of 87 or above in the prior CP-level language course or 83 or above in their prior Honors-level language course. Student performance on an Integrated Performance Assessment (IPA) or other language-specific assessment as well as departmental recommendation are also considered as a part of the determination of placement.

## PLACEMENT DECISIONS

Across all departments, a student interested in being considered for Honors/AP placement can expect one of three responses from the department chair following the evaluation of their preparedness for the challenge and opportunity of such a course.

**APPROVAL** - Student should enroll in the course and we support their desire to embrace such a challenge.

**CONDITIONAL APPROVAL** - Student is able to enroll in the course, however we DO NOT recommend their enrollment and/or believe that they should NOT enroll in all of the Honors/AP courses for which they are seeking placement in the upcoming academic year.

**DENIAL** - Student has not demonstrated preparedness for the course and is not able to enroll.

## ADVANCED PLACEMENT (AP) EXAMS

All students enrolled in AP courses may take the AP exam in May. However, sitting for the exam is not required and families should know in advance that these exams carry an extra fee. Sometimes, students who are not enrolled in an AP course at MFS wish to sit for the exam in that particular course. Where space is available, students are welcome to sit for exams associated with a course that MFS is offering that year. Students interested in this potential opportunity should reach out to the Director of College Counseling at the opening of the school year. Importantly, MFS does not proctor AP exams for courses which are not offered as a part of our academic program.

## COLLEGE ACCELERATION PROGRAM THROUGH ROWAN COLLEGE AT BURLINGTON COUNTY

In nearly all of our AP courses, students also have the opportunity to earn college credit for their coursework through a partnership with the [College Acceleration Program \(CAP\)](#) at Rowan College at Burlington County. Students in eligible courses receive further information about this program and how it relates to their specific courses at MFS at the beginning of each year. Any questions about the CAP program or eligibility should be directed to the Director of College Counseling.

# OTHER FEATURES OF THE CURRICULUM

## CONSIDERING AP SCORES VS. CAP CREDIT

We are often asked whether we recommend students sit for an AP exam or participate in the CAP program. There is no single answer to this question and we encourage students and families to research and consider the policies at the respective colleges or universities to which they may matriculate. Importantly, students should also consider their potential major(s) and the college or university's policies regarding outside coursework as a means to earn placement or credit. Questions in this regard can be directed to the College Counseling Office.

## ADDING/DROPPING COURSES

Students are notified of their major course enrollments at the end of the year or in the early summer preceding the academic year. During the summer months, students have the opportunity to make changes to their major course enrollment via scheduled appointment with the Registrar. Students are encouraged to request any changes to their major course enrollment before the start of the school year. However, students may also add and/or drop a major course before the end of the second full week of the school year. Due to scheduling and space constraints, we cannot guarantee that every desired change is possible. Students making changes to their major course enrollment should be prepared for the possibility that they will need to complete work assigned before they joined the course. All changes require the support of the department, the Upper School administration, the student's parent(s)/guardian(s), and a student's college counselor, if applicable. Minor course changes occur during the first two weeks of each semester and are not made during the summer. In some instances, it may be necessary and/or appropriate for a student to withdraw from a course after the conclusion of the add/drop window. In these instances, the student's transcript will include the notation of a "W" rather than a grade.

## MFS CAPSTONE PROGRAM

The MFS Capstone Program is designed to challenge and inspire students wishing to pursue advanced study in a particular field. Beginning in the spring semester of junior year and running through the middle of senior year, the program has participants produce scholarly work by engaging in independent research and/or creative development under the guidance of a MFS teacher/advisor. Capstone students are required to participate in the Capstone Research Seminar minor course in the spring semester of their junior year.

## ACCELERATION

Eligible students may seek permission from the department chair to accelerate within a particular discipline (e.g., math, world language) by tutoring, summer course work, or independent study. School-administered exams given late in the summer determine appropriate placement. Students interested in considering acceleration should reach out to the relevant department chair.

Given the multifaceted nature of world language study at level III and beyond, *a student may not pursue summer study for advanced languages (level III and beyond) without express permission from the department chair.* Permission to pursue advanced language study during the summer is rarely granted, and in such cases only to allow a highly capable student to promote his/her/their pursuit of the language at MFS during the academic year (e.g., study Spanish III during the summer in order to enroll in Spanish IV in the junior year).

# OTHER FEATURES OF THE CURRICULUM —

## OUTSIDE COURSEWORK

When a student has gone beyond MFS course offerings, we may recommend further study at local colleges or through accredited online institutions such as One Schoolhouse. The school does not record grades for this work, but transcripts for these courses may be sent directly to colleges.

## INDEPENDENT STUDY

Independent study allows students to pursue a particular course of study not offered in the standard curriculum. It is open to students who have demonstrated the ability and desire to work independently.

There are two basic types of independent study: A) designed by a student to explore a subject or topic of his/her own choosing in a manner which s/he proposes, and B) one structured by a faculty member. Both types of independent study proposals require the approval of an academic department and the Upper School director. Application forms for independent study are available from the Upper School office.

*Independent study courses may only be taken as minor courses and students must complete at least one arts class in the area of study before seeking an arts independent study.*

## PEER LEADERSHIP

Peer Leadership is a year-long course that guides all 9th grade students through their first year in the Upper School. The course is taught by 12th grade students who are trained by faculty members to facilitate discussions that introduce 9th grade students to the culture of the Upper School and to foster skills for critical thinking, ethical decision making, spiritual awareness, and resilience. Peer Leadership meets during a minor course period.





# GRADES

Moorestown Friends School follows a semester calendar with grades reported quarterly. All major courses give numerical grades on a 100-point scale or NC (no credit). Typically, end-of-year grades represent an average of the four quarter numerical grades and the final exam, where applicable. For seniors, the shortened fourth quarter may count for less, but this varies from course to course and depends upon the distribution of work over the course of the spring semester. Students are expected to show competence in all subjects and continued enrollment at MFS depends upon maintaining satisfactory academic standing. Students have two weeks from a term's end to complete any missing work and resolve incomplete status.

Report cards are issued in early November, late January, late March, and mid-June.

## HONOR ROLL

Students whose quarter grades average 92 and who have no grade below a 73 achieve honor roll status for that term. Year-end honor roll recognizes four successive quarters of such high achievement as well as exemplary performance on final exams. For seniors, the baccalaureate honor roll celebrates those who have made the year-end honor roll each of their four years during their high school career.

## ATTENDANCE

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Attendance is taken at the start of the day and during each subsequent class period and, in the Upper School, no distinction is made between "excused" and "unexcused" absences. We believe that consistent daily attendance is an essential component of full participation in the MFS program and also acknowledge that students may, for any number of reasons, occasionally miss all or part of a school day. To that end, students and parents/guardians should expect to be contacted by the school if a student's pattern of attendance is of concern to the school. Students and parents/guardians should also note that the Upper School utilizes attendance thresholds for the purpose of granting credit in any given course. Students can miss up to ten class meetings in a semester or twenty class meetings in a yearlong course, at which point they may be asked to withdraw from the course, may no longer be eligible for credit, or may be required to transition to pass/fail. Absences that result from participation in a school-sponsored activity such as a single- or multi-day field trip, dismissal for athletic competition, religious observance, or mandated quarantine due to COVID-19 infection or exposure do not count toward a student's total number of class absences.



# FOUR-YEAR PLANNING

The 9 and 10th grade years at MFS are spent largely engaged in an academic program that prioritizes breadth of experience. Importantly, even in these years, students have considerable choice in their minor course enrollment. Beginning in 11th grade, students have the opportunity to craft much more personalized programs of study while still completing certain graduation requirements. Below are sample pathways that a student could potentially take through their four years in the Upper School. You will notice remarkable similarity across the major course enrollments of these programs in the 9 and 10th grades before they each head in more personalized directions thereafter. As a school, we provide specific programmatic opportunities for students and families to learn about and consider options for their own “four-year plan”. However, we encourage students and families to reach out to their student’s advisor if they would like to talk about this further.

In the tables below, please note that “(H)” denotes enrollment in the honors version of that course. Additionally, a blank space in the minor block only communicates that the student was not pursuing a minor course that was a part of a particular narrative which might be ascribed to their four-year plan. They were still enrolled in minor courses and, for example, may have been completing requirements or trying out a new course with which they ultimately decided not to continue.

## HANDFUL OF AP COURSES ACROSS DISCIPLINES

	9th	10th	11th	12th
Major 1	English 9	English 10	11/12 Seminars (H)	11/12 Seminars (H)
Major 2	US History	19th Century History	AP US History	Law, Democracy, & Society (H)
Major 3	Geometry (H)	Algebra II (H)	Precalculus (H)	AP Calculus AB
Major 4	Physics First (H)	Chemistry (H)	AP Chemistry	Biology I (H)
Major 5	Chinese II	Chinese III (H)	Chinese IV (H)	AP Statistics
Minor(s)	Science Olympiad	Science Olympiad	-	Chinese History

*Student stopped world language after 11th grade to make room for two math courses, and picked up Chinese History as a minor to continue a connection with prior coursework related to the language.*

*Deferred Biology until 12th grade in order to take AP Chemistry in 11th grade.*

# FOUR-YEAR PLANNING

## HUMANITIES FOCUS

	9th	10th	11th	12th
Major 1	English 9	English 10	11/12 Seminars (H)	AP Literature
Major 2	US History	19th Century History	AP US History	Law, Democracy, & Society (H)
Major 3	Geometry (H)	Algebra II (H)	Precalculus (H)	AP Statistics
Major 4	Physics First (H)	Chemistry (H)	AP Biology	AP Psychology
Major 5	Chinese II	Chinese III (H)	Chinese IV (H)	AP Chinese
Minor(s)	Model UN, Public Speaking	Model UN, Mock Primary Election	Model UN, A National Election	Model UN, Long Civil Rights Movement

*Student stopped science after three years in order to take two classes in the History and Social Science Department in 12th grade. Completed summer study in order to take AP Biology. Participated in Model UN all four years in their minor blocks and also chose a variety of humanities-focused minors. This means that they opted for three minor courses in some semesters in order to complete arts and technology requirements.*

## AP MATH & SCIENCE WITH COLLEGE-PREP HUMANITIES

	9th	10th	11th	12th
Major 1	English 9	English 10	11/12 Seminars	11/12 Seminars
Major 2	US History	19th Century History	20th Century History	Economics
Major 3	Geometry	Algebra II (H)	Precalculus (H)	AP Calculus AB
Major 4	Physics First (H)	Chemistry (H)	AP Physics 2	AP Biology
Major 5	Spanish I-II	Spanish II-III	Spanish IV	AP Statistics
Minor(s)	Robotics	Furniture Design, Advanced Furniture Design	Advanced Furniture Design	Peer Leadership

*Student stopped language after three years to make space for two math classes in 12th grade. Took a sampling of minor courses with a developing interest in furniture design and served as a Peer Leader in 12th grade.*



# FOUR-YEAR PLANNING

## CP COURSEWORK WITH ENGLISH FOCUS

	9th	10th	11th	12th
Major 1	English 9	English 10	11/12 Seminars	11/12 Seminars
Major 2	US History	19th Century History	20th Century History	11/12 Seminars
Major 3	Geometry	Algebra II	Precalculus	Finance
Major 4	Physics First	Chemistry	Biology I	Semester Science Electives
Major 5	French II	French III	French IV	AP Computer Science Principles
Minor(s)	Journalism	Journalism	Journalism	Journalism

*Student doubled up on English courses in 12th grade. Participated in Journalism, a yearlong minor course, all four years.*

## ARTS FOCUS

	9th	10th	11th	12th
Major 1	English 9	English 10	11/12 Seminars	11/12 Seminars
Major 2	US History	19th Century History	20th Century History	Law, Democracy, & Society (H)
Major 3	Geometry	Algebra II	Precalculus	Intro to Calculus
Major 4	Physics First	Chemistry	Biology I (H)	Finance
Major 5	Spanish I-II	Spanish II-III	Studio Art I	AP Art & Design
Minor(s)	Fashion Sewing, Watercolor Painting	3D Design, Experimental Art, Oil Painting	Collage, Ceramics, Art in 3 Dimensions	Studio Art Lab

*Student enrolled in nearly all available art minors, preparing for Studio Art as a major course in 11th grade and AP Art & Design in 12th grade. A student who is interested in choir, orchestra, or ensemble, would also use one of their minor blocks to enroll in those courses.*

# FOUR-YEAR PLANNING

## HONORS/AP FOCUS WITH MATH ADVANCEMENT

	9th	10th	11th	12th
Major 1	English 9	English 10	11/12 Seminars (H)	AP Literature
Major 2	US History	19th Century History	AP US History	AP Statistics
Major 3	Geometry (H)	Algebra II (H)	AP Calculus AB	AP Calculus BC
Major 4	Physics First (H)	Chemistry (H)	AP Physics 2	AP Biology
Major 5	Spanish II	Spanish III	Spanish IV (H)	AP Spanish
Minor(s)	Model UN, Journalism	Model UN, Journalism	Model UN, Journalism	Model UN, Journalism

*Student self-studied Precalculus in the summer between 10th and 11th grade in order to advance from Alg II to AP Calculus in consecutive years. They also self-studied Biology in the summer after 11th grade in order to take AP Biology as their first biology course. Enrollment in two year-long minor courses for all four years means that the student took three minors in some semesters to complete arts and technology requirements.*









# PROGRAM AND COURSE DESCRIPTIONS



# ARTS

All arts courses except Studio Art and AP Art & Design, are minor courses. You can find a link to the most recent list of minor courses and their descriptions in the [minor course](#) area of this document; in fact, you will find the vast majority of arts offerings listed in this area. Students with an interest in the arts are urged to speak with the Arts Department faculty before choosing courses in order to arrange maximum credit and maximum exposure.

## ARTS: VISUAL ARTS

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### STUDIO ART 1 & 2 (2D OR 3D)

*Full Year*

Students in these courses are expected to develop mastery in concept, composition, and execution of ideas through the development of a comprehensive portfolio. In constructing the portfolio, students will explore creative thinking, the elements and principles of art, and the definition of design. Students are responsible for demonstrating mastery in using the elements of art in their work. Students enrolled in both levels of Studio Art must research their ideas for independent projects and document this in a sketchbook journal. Through a goal-planning process, students are guided in setting challenging but attainable creative goals for in-class and independent projects.

*Prerequisites: (2) visual art minor courses*

*Open to Grades: 11, 12*

### AP ART & DESIGN

*Full Year*

This course accommodates students interested in completing one of three AP portfolios: Drawing Portfolio, 2-D Design Portfolio and 3-D Design Portfolio. Emphasis is placed on the production of a volume of quality artwork pieces. Students address both aspects of the portfolio: sustained investigation and quality. Students are challenged to develop their own personal work, while mastering the concept, composition, and execution of their ideas and themes. Art-making is an ongoing process that employs critical decision making to best resolve problems, and students will develop a comprehensive portfolio that addresses these issues in a personal way. Submission of an AP portfolio in May for either Drawing, 2-D Design, or 3-D Design is optional for students in this course; there is an additional cost for submission.

*Prerequisites: (1) visual arts minor (choice), (1) drawing arts minor, AND Studio Art 1. For 2023-24 school year only: those not meeting the stated prerequisites need to provide current samples of completed works, complete a writing sample and must be recommended by a member of the department.*

*Open to Grade: 12*



# COMPUTERS & TECHNOLOGY

The courses listed in the section below are all major courses. However, numerous Computers and Technology courses are offered as minors. You can find a link to the most recent list of minor courses and their descriptions in the minor course area of this document.

## AP COMPUTER SCIENCE PRINCIPLES/ COMPUTER SCIENCE PRINCIPLE HONORS

*Full Year*

A requirement for success in the 21st century is creativity coupled with technology skills and critical thinking. The course will introduce students to the creative aspects of programming, abstractions, algorithms, large data sets, the Internet, and cybersecurity concerns. AP Computer Science Principles will give students the opportunity to use technology to address real-world problems and build relevant solutions. There will be speakers from businesses in our community and perhaps field trips to see real-world business applications. This class focuses on the innovative aspects of computing as well as the computational thinking practices that help students see how computing is relevant to many areas of their everyday lives. Determination of AP or Honors will be made three weeks into the quarter after a diagnostic test has been given.

Computational Thinking Practices learned in this class

1. Connecting Computing
2. Developing computational artifacts
3. Analyzing problems and artifacts
5. Communicating
6. Collaborating

It is a project-based class and one example may be the following:

- Analyzing sets of “Big Data” for a major company
- Identifying sales trends
- Forecasting future merchandise needed
- Using graphic art software to develop an advertising plan.

*Prerequisites: Permission from the department. Determination of AP or Honors will be made three weeks into the quarter after a diagnostic test has been given and all work up until that point is considered.*

*Open to Grades: 11, 12*

## AP COMPUTER SCIENCE

*Full Year*

This major course is comparable to a first-year college course in computer science. The course trains students to develop programs and solve problems using the programming language JAVA. It begins with an introduction to the history of computers and programming and continues with object-oriented programming that focuses on the development and analysis of algorithms and data structures. The topics covered are those set by the College Board. Students may take the AP exam in May, for which there is a fee. Grades are based upon at-home and in-class work, quizzes, projects, and test scores. Textbooks are provided for this class but students may have to purchase workbooks.

# COMPUTERS & TECHNOLOGY

## AP COMPUTER SCIENCE, CONT'D

*Prerequisites: To be considered for AP Computer Science, students must sit for a placement test which assesses their knowledge of JAVA. Satisfactory performance on the assessment is a prerequisite for enrollment. Students who are interested in AP Computer Science are encouraged, but not required, to enroll in the Intro to JAVA minor course. There is no prerequisite for H/AP Computer Science Principles.*

*Open to Grades: 11, 12*

## COMMUNICATION & MEDIA TECHNOLOGIES

*Full Year*

This course offers students a broad foundation in the technologies and common software applications (Adobe Creative Cloud applications, like Photoshop, Illustrator, Premiere Pro and/or InDesign) that allow us to create and share printed media, multimedia, and hypermedia (web pages). Through projects, like package design and video editing, students will learn the importance of balancing self-expression, strong design sensibilities, and the practical demands of communicating with an audience. Web design topics could include an introduction to HTML5, CSS, and the principles of designing a positive user experience.

*Open to Grades: 11, 12*

# ENGLISH

The courses listed in the section below are all major courses, and only one course option is available in grades 9 and 10. Students in grades 11 and 12 enroll in two semester-long seminar courses per year. The seminars are designed to cover a wide range of literature and interests, but all seminars are focused on analytical and comparative writing. Each semester there are eight seminars offered, all consisting of a mix of juniors and seniors.

11th and 12th grade students have the option to apply for entry into the department's Honors program. Students who apply for the Honors program in their seminars must commit to maintaining that designation in both semesters. Seniors have a choice of applying for a year-long AP English Literature course in lieu of two seminars. Work in the English Honors program is geared towards students interested in applying their analytical writing skills at a more in-depth and sophisticated level. The departmental expectation is that students who apply for acceptance to the Honors program are ready to encounter more challenging texts and assignments, show a deeper understanding of close reading and analytical writing, and work





# ENGLISH

independently. Honors English is not simply a placement, it is student commitment to embodying the work of a literary scholar. The AP course is a college-level literature class that culminates with the AP exam in May. Students who apply for AP should be excited to read our curriculum's most difficult texts and to delve into literary theory. Any student interested in applying for the Honors or AP program should review the information listed in this catalog and discuss further with their teacher, the department chair, or the Upper School Director.

English courses are also frequently offered as minors. You can find a link to the most recent list of minor courses and their descriptions in the minor course area of this document.

## ENGLISH 9

*Full Year*

Students in English 9 read a wide variety of literary works - from short stories and memoirs to plays and graphic novels. Throughout the year, students examine the power of the stories we tell ourselves and others about who we are. How do we develop both a personal identity and a communal or cultural identity through the stories we create and pass on? What happens if our life experiences suddenly contradict our ideas of who we are and what we stand for? Considering these and other questions will require both thoughtful reading and active participation. Students in English 9 write creatively, analytically, and interpretively as they work on becoming confident writers. English 9 begins a two-year program of intense study of analytical writing which culminates in English 10. Students also participate in independent reading and study vocabulary, grammar, and literary terms.

*Required in Grade 9*

## ENGLISH 10

*Full Year*

In English 10 we examine both classic and contemporary American literature, focusing on defining and questioning the concept of American identity. We divide the year into themed units, examining race, class, the environment, and war. Our texts allow students to ask essential questions about the themes, and then build on their contemporary connections to those texts and themes. Students will also build on their 9th grade study of essay writing and focus on in-depth literary analysis, as they complete a two-year intense course of study in the conventions of analytical writing. The study of vocabulary, grammar, and literary terms continues in the 10th grade year.

*Required in Grade 10*

## ENGLISH 11 & 12

The chart on the next page identifies which courses are offered in the fall and which in the spring. Seniors whose schedules allow may double-up and take two seminars in both semesters.

# ENGLISH

## ENGLISH 11 & 12

FALL SEMESTER	FALL SEMESTER	SPRING SEMESTER	SPRING SEMESTER
African-American Literature	Arthurian Legend in Literature	Literature and Film of the Holocaust	Global Short Stories
The Monstrous in Literature	Indigenous Literature	The Evolution of Romantic Comedy	Gender and Literature
The Literature of Yiyun Li	Literature of War	Science Fiction	Classic Visions of Hell
Representations of Family in Literature	Wilderness Literature	Mythic Echoes in Literature	Contemporary Poetry
	AP English Literature (full year)	AP English Literature (full year)	

## COURSES: FALL SEMESTER

### AFRICAN-AMERICAN LITERATURE

When he wrote the line, "I, too, sing America," Langston Hughes made the important case for a more inclusive American story; this course takes up Hughes' mandate by examining the rich history of African-American voices in American literature. This course will trace the history of African-American literature from slave narratives to contemporary novels, with a focus on important literary movements like the Harlem Renaissance and the Black Arts Movement. As we read, we will examine how these writers speak to their historical moments and to contemporary issues we face as a nation today.

*Open to Grade: 11 & 12*

# ENGLISH

## COURSES: FALL SEMESTER

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### ARTHURIAN LEGEND IN LITERATURE

He is known as the once and future king of England. Arthur may have been an actual historical figure, but even if he is completely born of myth, he and the court of Camelot have captured the imaginations of people since 830 AD! Films and books continue to be created in great numbers to this day with no sign of the story's popularity waning. This course will explore the evolution of the Arthurian myth throughout the ages and how mythology as a concept works.

*Open to Grade: 11 & 12*

### THE MONSTROUS IN LITERATURE

We are fascinated by monsters, both imaginary and all too human. This fascination is apparent in our literary history, starting with mythology and continuing in contemporary works. This course will introduce students to a number of "literary monsters" as we contemplate the nature of evil, but also the way we use monstrosity to represent those marginalized by society or to teach social lessons (the word "monster" shares its roots with the word "demonstrate," after all).

*Open to Grade: 11 & 12*

### INDIGENOUS LITERATURE

There is a rich body of works created by those indigenous to the land now called the United States. This literature deals with the trauma and conflict induced by the creation of the U.S. and its policies and prejudices today and also celebrates the beautiful history and cultures that have lived here for thousands of years. This course will explore some of that literature, poetry, and art, reminding us that our definition of "American Literature" often leaves out these powerful voices.

*Open to Grade: 11 & 12*

### THE LITERATURE OF YIYUN LI

Many English courses try to include a variety of voices and perspectives, but this course will do the opposite. We will do a deep dive into a single author, allowing us to follow their thinking across multiple forms and genres and deepen our engagement through more biographical and historical context than we would typically have time for. Thematically, this course will focus on modern Chinese culture and society from a critical perspective because this year's author will be Yiyun Li, a Chinese writer who moved to the U.S. after college to study immunology and then suddenly decided to become a writer instead of a scientist.

*Open to Grade: 11 & 12*

# ENGLISH

## COURSES: FALL SEMESTER

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### LITERATURE OF WAR

The experience of war, whether through combat service or other involvement, is doubtless something that even the greatest of writers cannot capture in all of its destructive emotional power and uniqueness. However, again and again, writers have felt driven to try, and the result is an enduring body of literature. In Literature of War, we will study poetry, short stories, novels, and nonfiction about war, works that examine war from many different ethical and cultural perspectives.

*Open to Grade: 11 & 12*

### REPRESENTATIONS OF FAMILY IN LITERATURE

The family: whether we immerse ourselves in it or try to escape it, its influence is undeniable. In this course, we will examine family relationships between parents and children, among siblings, and across multiple generations. How do authors and playwrights portray the complexities of family relationships, and how do they use those relationships to explore identity and culture?

*Open to Grade: 11 & 12*

### WILDERNESS LITERATURE

The wilderness draws us in with power. On the one hand, these wild places away from civilization mean adventure, danger, excitement, and escape. On the other hand, the wilderness can also be a place of peace and tranquility, far away from the distractions of a crowded, built-up world that is under the control of humans. In Wilderness Literature, we will read stories from writers whose stories take place in a range of wilderness settings. We will discuss how writers can bring us into far-flung places, explore humanity's connection to the natural world, and wonder about how being in a wild space can somehow deepen our understanding of our humanity.

*Open to Grade: 11 & 12*

## COURSES: SPRING SEMESTER

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### LITERATURE AND FILM OF THE HOLOCAUST

The Holocaust is not an easy topic to discuss; the images such discussion brings to mind are unsettling at best. At the same time, these discussions are vital. We must realize that the Holocaust was not the only, nor the most recent, example of genocide in our world. When we confront the Holocaust and attempt to examine it beneath the surface, we take one step closer to fighting the reoccurrence of such atrocities. In this class, we will read a wide variety of artistic responses to the Holocaust, ranging from survivor memoir to fiction written by authors a generation or more removed from World War II. We will look at how writers, poets, filmmakers, and visual artists have worked with this subject, and ask ourselves this essential question: Why would we make art from something so horrifying?

*Open to Grade: 11 & 12*



# ENGLISH

## COURSES: SPRING SEMESTER

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### GLOBAL SHORT STORIES

A short story is a piece of fiction that can be read in a single sitting. Short stories are not only short, of course, but they are also unified, focused, powerful, vivid, and enjoyable to read. This class will examine short stories from around the world, using the efficiency of the form to allow us time to explore a wide range of literature. There will be a large component of student choice in this class, with students taking on the responsibility of choosing stories from our anthologies.

*Open to Grade: 11 & 12*

### GENDER AND LITERATURE

This course will offer an introduction to gender studies, with an emphasis on authors whose works discuss social issues relevant to the gender binary (like feminist literature) and authors whose works question that binary and are more fluid in their concept of gender identity. These works have existed for centuries, and we will read both classic and contemporary texts.

*Open to Grade: 11 & 12*

### THE EVOLUTION OF THE ROMANTIC COMEDY

You know them, you love them: Romantic comedies come with their own set of conventions and familiar moments, from the “meet cute” of the two main characters to the inevitable stumbling blocks they encounter on their road to a happy ending, all culminating in a dramatic declaration (preferably after running through an airport). The genre of romantic comedy, though, is a longstanding one in literature, with works by Shakespeare and Jane Austen falling squarely into that category. This course will explore some of those older works along with contemporary ones, in an effort to trace the evolution of the genre and ask ourselves questions about why we are so invested in these types of stories and what they might have to say about their authors’ societies.

*Open to Grade: 11 & 12*

### SCIENCE FICTION

How do advances in science and technology impact human cultures and the lives we lead? How do authors use unrealistic settings and premises to investigate very real ethical, political, and psychological issues? By reading science fiction short stories and novels from across the 20th century, including works by such authors as H.G. Wells, Isaac Asimov, William Gibson, and Margaret Atwood, we will explore the intersection between what is unique to the genre and what is universal to all great literature. Scifi’s speculations lead to fascinating ideas not just about our future but also about our present and our past, ideas that challenge our most basic understanding of what it means to be human, alive, and real.

*Open to Grade: 11 & 12*

# ENGLISH

## COURSES: SPRING SEMESTER

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### CLASSIC VISIONS OF HELL

This course provides a chronological survey of hell as depicted in European literature, including excerpts from classic works by Virgil, Ovid, Dante, and Milton, as well as modern works such as Sartre's *No Exit* and C.S. Lewis's *The Screwtape Letters*. Because we will be reading works from Imperial Rome, the Late Middle Ages, and the English Renaissance, expect to be challenged by difficult writing. But a significant part of our mission will be helping each other learn how to handle and appreciate the difficulty of texts like these. This course will also give us the opportunity to dig deeply into a very limited set of themes rather than skim the surface of many different topics. Our touchstones will be themes like faith, justice, sin, suffering, and the soul.

*Open to Grade: 11 & 12*

### MYTHIC ECHOES IN LITERATURE

This course will examine some of the stories that have made their way into myriad works of Western art and literature. Our class will highlight issues that these texts addressed thousands of years ago and their resonance in today's world. We will gain familiarity with Greek and Roman myths by reading Euripides' *Medea* and selections from Ovid's *Metamorphoses*. At the same time, we will explore in depth the way that a contemporary novel, Jesmyn Ward's *Salvage the Bones*, makes use of, talks back to, and echoes these tales of tragedy and transformation.

*Open to Grade: 11 & 12*

### CONTEMPORARY POETRY

This course will examine the writing of two major contemporary poets, taking a deep dive into their work and biographies. We will spend time looking at the ways that each poet's work is influenced by their personal and community identity, and we'll explore a variety of poetic forms they use.

Most of our work will focus on analytical close reading, balancing our personal responses to the poems with a more technical application of terms and concepts we have learned, but we will write some poetry as well.

*Open to Grade: 11 & 12*

# ENGLISH: COURSE DESCRIPTIONS

## FULL YEAR

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### AP ENGLISH LITERATURE AND COMPOSITION

The AP course in English Literature is a challenging, college-level course that engages students in the close reading of both classic and contemporary literature. Spanning time and geography, the course includes works that seem fundamentally different (and therefore offer a wide range of topics for discussion and analysis), but also share thematic elements that “speak” to each other in interesting and often surprising ways. Students will work together with the teacher in the spring of their junior year to choose some texts together to help shape the course based on student interests. At the conclusion of the course, all students are prepared to take the Advanced Placement exam in English Literature and Composition. However, sitting for the exam is optional and requires additional expense. This course includes additional summer reading, independent reading over winter and spring breaks, and an emphasis on literary criticism and research.

*Open to Grade: 12*

## HISTORY

The Upper School History program builds on the foundational skills of our Middle School program which include learning to evaluate sources, interpret evidence, and develop a broader historical perspective on the world. Students continue this work in Upper School history courses which challenge them to understand history as more than a subject dedicated to the memorization of names and dates. Through their study, Upper School students come to understand history as a discipline of inquiry, analysis, and communication. History courses in the Upper School focus on helping students build historical knowledge and develop historical methods of research, organization, synthesis, and argumentation. The goal of this work is to graduate students who understand the complexity and nuance of history and are able to grapple with uncertainty. These students are able to step into adulthood with empathy, respect for diverse perspectives, and the ability to develop their own understanding of contemporary issues.

The course of study in the History department begins with a focus on skills development in 9th grade. All students take 9th grade “Introduction to Historical Methods” in order to develop the necessary skills to succeed in the program. This course focuses on the history of the United States. All 10th grade students take 19th Century History which offers a comparative approach to history. In 11th grade, students may choose between AP US History or 20th Century History at the College Prep or Honors level. In addition, 12th grade students have the choice of three different year-long electives listed below. Students may choose to complete their three required years of History in their junior or senior year. History courses are also offered as minor courses. The most recent list of minor courses and their descriptions can be found in the minor course section of this catalog.



# HISTORY

## HONORS/AP PROGRAM

Students enrolled in 11th and 12th grade history courses have the option to apply for entry into the department's Honors program. Work in the History Honors program is geared towards students interested in applying the skills developed in their early years of study and working as historians in these courses. The departmental expectation is that students who apply for acceptance to the Honors program are ready to encounter more challenging texts and assignments, show a deeper understanding of contingency, continuity, and change over time, and work independently. Honors history is not simply a placement, it is student commitment to embodying the work of an historian. Any student interested in applying for the Honors or AP program should review the information listed in this catalog and discuss further with their teacher, the department chair, or Upper School Director.

## INTRODUCTION TO HISTORICAL METHODS: TOPICS IN US HISTORY FROM PAST TO PRESENT

*Full Year*

This course introduces students to the skills needed to be successful in high school history courses and beyond. Topics chosen each year will allow students to closely compare present and past, making meaningful connections between their own lived experience and important historical issues.

This comparative approach is designed to develop students' historical research and analysis skills and support the development of their media literacy and interest in current events. The value of historical work often lies in making salient connections between past and present. The goal of the MFS History Program is to graduate students who know how to approach, vet, and contextualize sources and information. In this historical moment when so much information is available at the tip of one's fingers, it is crucial that students know how to distinguish facts from speculation, understand bias, and learn how to make informed, evidence-based conclusions. This 9th grade course grounds students in the skills and techniques necessary to interpret facts, analyze data, and develop their own understanding of the world around them. The course material is designed to support students in thinking creatively and taking intellectual risks. Students will encounter multiple perspectives in this course and be offered the opportunity to develop their own analysis of the world around them.

Coursework will provide a solid grounding in the skills necessary to excel in advanced history classes. These include: primary source analysis, annotation, understanding how to interpret and take oral histories, proper Chicago style citation, note taking, primary and secondary research, scholarly discussion and civil discourse, presentation, thesis writing, and analytical and creative historical non-fiction writing.

*Required in Grade 9*

# HISTORY

## 19TH CENTURY HISTORY

*Full Year*

The purpose of this course is to introduce students to the ways of thinking, being, and acting in the 19 century that shaped the historical context of the modern world. By necessity the course must deal with the developments in Western thought, governance, law, and economy that spread both intentionally and unintentionally throughout the world. As citizens and residents of the United States, it is important for students to understand these developments and to confront the consequences of 19th century Western development. It is also crucial for students to examine the ways non-Western peoples understand this time period and the ways they organize and historicize development in this period. In doing so, 10th grade history at MFS builds on the skill foundations of 9th grade and challenges students to further develop their ability to engage in critical, comparative thinking.

Coursework will challenge students to consider and explain continuity and change over time using relevant evidence. Building on skills from 9th grade, students will be challenged through close reading of primary and secondary source material, discussion, individual and group research, writing, and presentation. This will include quarter-long research on a topic of the student's choosing, production of an original research paper, and formal sharing of this work through in-class academic seminars.

*Required in Grade 10*

## 20TH CENTURY HISTORY/20TH CENTURY HISTORY HONORS

*Full Year*

The 20th century is commonly referred to as "The American Century." This course focuses on the history of the 20th century and the complex interactions among the United States, Europe, and the emerging powers of the non-western world. The course includes four main themes: global interdependence, rise of mass society, issues of identity, and the impact of new technology. In this course students demonstrate mastery of certain historical skills: research, critical reading, critical thinking, and effective oral and written expression. Students write a full research paper on a topic of their choice and complete several shorter research assignments.

Students interested in Honors 20th Century History will need to submit a writing sample in order to be considered for honors. Students enrolled in Honors will have higher expectations on assignments utilizing honors level rubrics that will include deeper historical analysis of primary sources and drawing insightful interpretations using historical evidence. Honors work challenges students who have an interest in history to think and produce work as a historian.

*Open to Grade: 11*

# HISTORY

## AP UNITED STATES HISTORY

*Full Year*

While AP United States History is designed to increase students' knowledge base of United States History, at the core of the course is a deeply held commitment to helping students develop and improve their skills in reading comprehension, analytical thinking, and articulate written expression. Therefore, the class utilizes both primary and secondary sources with an eye toward supporting student understanding and analysis of United States history across a range of themes, including ideas of identity, interaction, citizenship, justice, opportunity, reform, and transformation. Throughout the course, students are encouraged to pay particular attention to the multifaceted nature of US history, especially with regard to understanding primary sources and their value as a tool for historical scholarship. Another vehicle for student learning in this regard is the use of pedagogical training and course materials from the Case Method Institute for Education and Democracy. Sample forms of assessment include assigned essays, AP-model multiple choice questions, group projects, and other creative assignments which, for example, might ask students to design their own political cartoon or write the lyrics to their own protest song. All students will be prepared for the AP exam in May. However, sitting for the exam is optional and requires additional expense.

Prerequisites: students who meet the grade eligibility requirements and are interested in AP United States History must complete a placement assessment. After completing assigned reading, students will produce a writing sample in response to a specific prompt and answer a collection of AP multiple choice questions. Performance on these tasks will be considered, alongside prior grades in one's history courses, when determining placement decisions.

*Open to Grade: 11*

## HISTORY: SENIOR COURSES

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### AP PSYCHOLOGY

*Full Year*

The Advanced Placement Psychology course is designed to introduce students to the systematic and scientific study of the behavior and mental processes of human beings. Students are exposed to the psychological facts, principles, and phenomena associated with each of the major subfields within psychology. They also learn about the ethics and methods psychologists use in their science and practice. AP Psychology is an introductory college level course that culminates in the administration of the AP exam. Because it is a college level course, students will be required to be active participants in the learning and examination of the material. Required weekly readings along with long-term assignments/projects will be part of required work. The class will also focus on reading/discussing current research, analyzing case studies, conducting experiments, and working on your own research. All students enrolled at the AP level may take the AP exam in May, for which there is an additional expense.

Prerequisites: students who meet the grade eligibility requirements and are interested in AP Psychology must complete three distinct tasks for consideration: attend an informational session that will be held during lunch, completion of a Free Response Question modeled on the official AP test, and reflection questions on their interest in, preparedness for, and commitment to this particular AP course. Students will be expected to prepare using materials provided by the department. Students who fail to request these materials by the appointed time will be disqualified from consideration.

*Open to Grade: 12*



# HISTORY

## HISTORY: SENIOR COURSES

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### HONORS/COLLEGE PREP ECONOMICS

*Full Year*

The senior economics elective introduces students to the principles of both micro and macro economics, with a deeper focus on micro economics. Students will examine the ideas of several economists including Adam Smith, David Ricardo, John Stuart Mill, Karl Marx, John Maynard Keynes, and Karl Menger and Friedrich Hayek of the Austrian School. Students will apply economic theory to real-world problems both large and small as they learn the power of incentives in a social economic structure. Though the course is focused on capitalism, students will also examine the role of government in an economy. Students will learn to graph economic models, understand positive and normative economic statements, and predict economic outcomes. This course is offered as Honors and College Prep.

Students in Honors Economics will be expected to approach the work of economics as economists, not simply as students of economics. They will be asked to dig deeper into the topics covered, encounter more challenging texts, and will be graded with different rubrics than the college prep students.

*Open to Grade: 12*

### HONORS/COLLEGE PREP LAW, DEMOCRACY, AND SOCIETY: IS DEMOCRACY IN CRISIS?

*Full Year*

It is often said that the United States has an exceptional democracy. This course, among other things, is concerned with the question of whether the structure of American democratic institutions is similar or dissimilar to other democratic states; and do those differences matter. If it is different, in what ways is American democracy different and do those differences matter? This course will examine the choices made by the designers of American government at the Philadelphia Convention of 1787 and the institutional structures that evolved from those choices and compare them to other democracies. To answer this question, students will study many of the ancient as well as enlightenment philosophers of government including but not limited to Plato, Aristotle, Hobbes, Locke, Montesquieu, and Rousseau. In addition, students will study the Electoral College, comparing it to other democratic international executive electoral systems, and whether it should be abolished or modified. Students will also study the law, specifically the first amendment, the fourth amendment, and possibly the second and fourteenth amendments. Students will learn how to become appellate lawyers and participate in several moot court competitions. Students will have the opportunity to engage with professionals in the legal field. This course tackles many cutting edge, contemporary issues, teaching students how to address them not only in a civic manner, but also in a real-world, practical setting.

# HISTORY

## HISTORY: SENIOR COURSES

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### HONORS/COLLEGE PREP LAW, DEMOCRACY, AND SOCIETY: IS DEMOCRACY IN CRISIS?, CONT'D.

*Full Year*

Students in Honors Law, Democracy, and Society will be expected to approach the work as trained political scientists and lawyers. Honors students will be asked to exhibit characteristics looked for in prospective students of the law: commitment to close reading; analysis that demonstrates understanding of complexity and nuance; precise and persuasive writing; and clear, concise speaking that embraces legal language.

*Open to Grade: 12*

# MATHEMATICS

The Mathematics Department seeks to develop the collaborative skills, critical thinking, and problem solving talents of our students. We hope to foster an appreciation of mathematics, its language and applications, in daily life in a diverse world. This vision is supported by the standards of the National Council of Teachers of Mathematics and the overall mission of MFS.

## MOVING THROUGH MATH DEPARTMENT OFFERINGS

The overwhelming majority of students follow a program of study that takes them through geometry, algebra II, Precalculus in the grades 9,10, and 11, respectively, before choosing among calculus, finance, or statistics in 12th grade. With the exception of Finance, all courses have both College Prep and Honors/AP offerings.

Some students enter the Upper School or join MFS at a point in the math progression that does not align with the program outlined in the preceding paragraph. In that instance, students pick up the sequence where appropriate.

# MATHEMATICS

## ACCELERATION/ADVANCEMENT

A student in a College Prep math class can self-study in the summer to enroll in the Honors level class the following year given they have earned an 87% or higher in the College Prep Algebra based course, demonstrate strong class stewardship, and have teacher and department recommendation. They must earn an 87% or higher on the placement test in late August/September to enroll into the Honors course. They may not self-study the next course in the sequence, but only enroll in the Honors course through this process.

If a student demonstrates exceptional talent in their math class and earns a 87% or better year end average, with teacher and department recommendation they may self-study the next course in the summer and take a placement test in late August/early September. They must earn an 87% or higher on the placement test to schedule into the next course in the sequence. This summer study is not available for Honors Geometry and Honors/AP Calculus AB.

Honors courses are designed for students who show initiative and critical thinking skills. The student should demonstrate strong class stewardship, including completion of assignments, ability to work collaboratively, and positive class engagement. They approach math with enthusiasm and possess an intrinsic motivation for learning the application of mathematics.

A student who is in a Honors course must earn a year-end average of 83% or higher to enroll in the next Honors course in the sequence. To enroll in AP Calculus AB, a student must end the year with an 83% or better in Honors Precalculus and earn an 87% or better on the placement test given at the end of the year.

## ASSESSMENT

In each course, students can expect to be assessed through daily assignments, short quizzes, unit tests, and unit projects. Each assigned assessment and project provides an opportunity for the students to apply their learning and, possibly, show a different skill than just math skills. These could include artistic talent, creativity, collaboration, communication, organization, and public speaking. College Prep and Honors classes can vary in additional topics and/or application of these topics. AP classes follow the College Board provided curriculum.

## COLLEGE PREP OR HONORS GEOMETRY

*Full Year*

Students will study and apply these topics: polygons, parallel and perpendicular lines, triangles, similarity, introduction to trigonometry, special triangle relationships, quadrilaterals, circles, transformations, area, and volume. The students will learn stronger reasoning and proving skills. The College Prep course will do a deeper review of Algebra I topics as they apply to Geometry.

# MATHEMATICS

## COLLEGE PREP OR HONORS ALGEBRA II

*Full Year*

Students will study and apply these topics: linear equations, inequalities, products and factors of polynomial expressions, rational expressions and equations, irrational and complex numbers, quadratic equations, variation, polynomial equations, conic sections, permutations, combinations, probability, and an introduction to logarithmic and exponential functions. Honors Algebra II studies the application of functions more deeply through modeling exercises.

## COLLEGE PREP OR HONORS PRECALCULUS

*Full Year*

Students will study functions, including linear, quadratic, polynomial, rational, exponential, logarithmic, and trigonometric. Students will be able to graph, solve, and find equations of functions. The study of trigonometry will include the unit circle, velocity, identities, triangles, and definitions and applications of the six trig functions. Honors Precalculus is not a College Board AP class, but completion of this class will help greatly in preparation for the Precalculus AP exam. If a student chooses to take the AP exam, it is recommended to get a prep book to work through outside of class.

## ADDITIONAL COURSES

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Upon completion of Precalculus, students can select from the courses listed below. Students can take two of these courses concurrently if their schedule permits.

### INTRODUCTION TO CALCULUS

*Full Year*

Students will study a review of functions, limits, derivatives and their applications, integration and application of integrals. This course will prepare first year college students for a full semester of Calculus.

### HONORS/AP CALCULUS AB

*Full Year*

Students will study a review of functions and trigonometry, limits, continuity, definition of the derivative, the derivative rules, trigonometric derivatives, applications of derivatives in relation to graphing and motion, integration, and applications of integration in area and volume. The AP students will complete AP style problems regularly to prepare for the May exam. Enrollment in AP Calculus requires a year-end average of 87% or higher in Honors Precalculus and a strong grade on a placement test.



# MATHEMATICS

## OTHER COURSES

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### FINANCE

*Full Year*

Students will study how financial markets work, design a personal finance plan, how to select among various savings and investment options and create a portfolio, and how to find and use investment information. Students explore topics such as consumer credit, credit cards, taxes, and retirement planning. Additionally, students learn about financial resources and evaluation tools available to them via the Internet. This course does not fulfill the third year requirement for math, but students may take this as a second math in 11th grade if the schedule permits. Priority registration is given to 12th grade students.

### COLLEGE PREP/HONORS/AP STATISTICS

*Full Year*

Students will study many details of data, including how to collect it objectively, display it, and analyze it. Students will critically interpret the data to form conclusions. Students will also study probability and its applications. The AP class will complete AP-style problems regularly to prepare for the May exam. The AP class will learn more techniques for data analysis, including significance testing and chi square tests, than the other two levels. Enrollment in AP Statistics requires an 83% in Honors Precalculus or a 87% in CP Precalculus. CP/Honors course does not fulfill the third year requirement for math, but students may take this as a second math in 11th grade if the schedule permits. Priority registration is given to 12th grade students. AP Statistics is only open to 12th grade students.

### AP CALCULUS BC

*Full Year*

Students will study a review of Calculus AB, differential equations and applications, modeling differential equations, sequences, infinite series, convergence, alternating series, Maclaurin and Taylor series, polar coordinates, and parametric equations.



# PHYSICAL EDUCATION & HEALTH

Physical education in the Upper School consists of a wide variety of activities that focus on physical fitness, sports skills, cognitive development, and lifetime recreational pursuits. Having gained a broad foundation in the Lower and Middle School programs, students in the Upper School are presented with activities that encompass individual and dual sports (e.g., PickleBall and tennis), traditional team sports (e.g., soccer, flag football, floor hockey, basketball, team handball and base games), lifetime recreational activities (e.g., bowling, dance, golf, weightlifting, Frisbee games, volleyball, and Cooperative Games), and activities that specifically address the five related fitness components (e.g., yoga, Pilates, and aerobics). Additional offerings are presented as student interest arises. All physical education classes include appropriate warm-up and fitness-related activities. Of equal importance are the development of sportsmanship, cooperation, self-discipline, self-esteem, and a positive attitude toward physical fitness and physical endeavors.

Students in grades nine, eleven, and twelve also receive classroom instruction in health and wellness for one quarter each academic year. During 10th grade we offer the 30-hour classroom component of Driver's Education.

9th grade students study mental and social health as well as substance abuse. Other topics discussed include, but are not limited to depression, self-esteem, emotions and drug use, misuse, and abuse. In grade eleven the area of concentration is human sexuality. Components of the curriculum include reproduction, stages of pregnancy, safe sex practices, and relationships. 12th grade students concentrate on various health topics that apply to anyone transitioning to the greater independence afforded by college. Stress management and the mind/body connection are discussed, and students learn how to apply stress management skills. Other topics include nutrition and current health issues in the news that will affect the emotional and social aspects of a student's day-to-day interactions.

Many physical education and health courses are also offered as minors and available to all grades. You can find a link to the most recent list of minor courses and their descriptions in the [minor course](#) area of this document.

## RELIGION

Quakerism is an integral part of life at Moorestown Friends School. It undergirds the school's philosophy and approach towards education. Quakers believe that everyone has a spiritual dimension and that understanding and developing that dimension is as fundamental to education as mathematics or reading. The Upper School's emphasis on spiritual education is developed in a number of ways, through: service activities; formal classes; student government; attention to Quakerism's central values; and a deep commitment on the part of the staff to nurturing the life of the spirit.

# RELIGION

A Friends school does not aim to create Quakers but rather to help young people become aware of the “Inner Light,” that spiritual presence in all of us that provides guidance and direction for living in our complicated world. The school believes that the religious tradition of each student is strengthened by the understanding of Quaker history, faith, and practice. One of the strengths of a Quaker education is its focus on empowering students to develop and use their talents and gifts within a caring community. The practices of Quakerism, especially Meeting for Worship, give young people powerful tools for spiritual growth. Meeting for Worship is a setting in which that growth is nurtured. The students gather silently to reflect together. Sometimes Meeting begins with a story or brief talk on a topic of concern to the community; we encourage students to speak from their hearts if so moved; always we let the silence work on us together. This quiet time together provides us with focus, with space to be reflective, and with a peaceful center to our busy week. Returning graduates will often single out Meeting for Worship as the most formative part of their education at Moorestown Friends School.

Students must take three required religion courses as part of their graduation requirement. In 9th grade students take a required course on Quakerism, in 10th grade students will take Leadership in the Quaker Dimension, and in 11th grade a course in World Religions.

## REQUIRED COURSES

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### QUAKERISM

The 9th grade Quakerism course serves to introduce students to the Quaker culture of the MFS Upper School through exploring Quaker history, beliefs, and practices. It will give students the opportunity to examine Quakerism academically while also providing space for personal reflection and spiritual development. The course will highlight Quaker Meeting for Worship, Meeting for Worship for Business, Quaker Testimonies, and practice of Letting Your Life Speak. A primary goal is to help students understand the foundations of MFS and put their learning into practice through building an Upper School culture inspired by Quaker tradition.

*Required in Grade 9*

### LEADERSHIP IN THE QUAKER DIMENSION

Moorestown Friends School graduates are well-positioned to be effective leaders of today’s complex business, social, and political organizations. For that reason, MFS has embraced the following unifying concept: “Moorestown Friends School uniquely combines academic rigor and Quaker values to produce graduates who will be successful, ethical, and service-oriented leaders.” This course is designed as an introduction to leadership theory and practice, with special attention to how Quaker values and practices can inform and influence what sort of leaders you will become. It includes important skill-building, particularly in making persuasive presentations. It also includes an opportunity for each student to identify his/her authentic leadership style. In learning about Command & Control, Servant, Ethical and Quaker leadership, students will develop a deep understanding of their own style and set leadership goals for the remainder of their time at MFS.

*Required in Grade 10*

# RELIGION

## WORLD RELIGIONS

The 11th Grade World Religions course is designed to help students understand the concept of 'religion' and how religion impacts our society. This course introduces a variety of religious expressions, some of which may be different from students' expectations. It highlights approaches to the study of religion, which include: comparing beliefs and practices, understanding the diversity which exists within religions, and demonstrating critical thinking. At the end of the course, students will have a tool kit which provides a lifelong engagement with religious studies both personally and academically.

*Required in Grade 11*

# SCIENCE AND ENGINEERING

For students beginning MFS Upper School in the 9th grade, the three-year graduation requirement for science is satisfied through completion of three required courses: 9th grade Physics First, 10th grade Chemistry I, and an 11th or 12th grade Biology course. Beginning in their junior and senior years, students may also choose to enroll in science elective courses, which span a range of faculty and student interests and include a rotating selection of AP options. Students entering MFS in the 10th grade or later must complete three years of Upper School science to graduate. This can include coursework completed before entering MFS. Students in this situation are not required to take physics, but should be aware that Physics First is the only first-year physics course offered at MFS.

Some of the upper level science courses are differentiated, combining college prep and honors students. Students should register for the option they are interested in pursuing, after making sure that they are qualified (see individual course descriptions for details). Instruction in differentiated classrooms is aimed at the higher level with assessments, lab work, homework, and grading standards matched to the level. Students who opt for AP should be prepared for a greater volume of work and higher expectations for independent learning, intellectual complexity, and demonstration of mastery. If you have further questions about Honors or AP placement, please reach out to the Science Department Chair. In addition to the many major courses listed below, the Science department offers a number of minor courses each semester. You can find a link to the most recent list of minor courses and their descriptions in the minor course area of this document.



# SCIENCE AND ENGINEERING

## PHYSICAL SCIENCES

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### COLLEGE PREP PHYSICS FIRST

*Full Year*

This course is an introduction to the principles of physics, with an emphasis on problem-solving using basic algebra skills. Through hands-on lab work and group activities, students gain a deeper understanding of physics principles that affect them every day, and which will serve as underpinnings for chemistry and biology. Topics will include motion, forces, momentum, energy, and waves. Students will be guided through the practice of scientific investigation via activities that require graphing, collecting and analyzing data, and presenting results and conclusions to their peers. Grades are based on at-home and in-class work, laboratory work, tests, and the successful completion of a project for exhibit in the annual Science and Engineering Exposition (SEE).

*Open to Grade: 9*

### HONORS PHYSICS FIRST

*Full Year*

This course is also an introduction to the principles of physics. The content covered is the same as the College Prep Physics First course, but in greater detail and with the use of more rigorous math concepts. Students are also expected to complete an independent project that will be presented at the annual Science and Engineering Exposition (SEE). Recommended for students earning a grade of 93% or higher in their previous MFS science class.

*Prerequisites: To be eligible, a grade of 90% or higher in their previous MFS science class, satisfactory performance on the science department placement test, and a teacher recommendation. New students to MFS must submit their year-end report card and sit for a placement test. Any student who is new to MFS in 9th grade and has not yet completed Algebra 1 must enroll in College Prep Physics First.*

*Open to Grade: 9*

### COLLEGE PREP CHEMISTRY 1

*Full Year*

Chemistry is the study of matter, its structure, properties and composition, and the changes that matter undergoes. This is a first year, laboratory-based course designed to give students an opportunity to explore a variety of topics in general chemistry. In this course, we will study the fundamental principles of chemistry, which will allow you to further explore scientific systems in greater depth in future coursework. The laboratory portion of this course will reinforce concepts and processes discussed in class, as well as provide a hands-on, inquiry-based experience to supplement classroom discussion. At appropriate times, students will be aided in the data collection and analysis process by the use of modern laboratory instrumentation. Grades are based on at-home and in-class work, laboratory work, in-class assessments, and the successful completion of a project for exhibit in the annual Science and Engineering Exposition (SEE).

*Prerequisite: Physics First*

*Open to Grade: 10*

# SCIENCE AND ENGINEERING

## HONORS CHEMISTRY 1

*Full Year*

This course is also an introduction to the principles of chemistry. The content covered will go beyond that in the College Prep Chemistry course. Students are also expected to complete an independent project that will be presented at the annual Science and Engineering Exposition (SEE). The science department recommends this course for students earning an 87% or higher in Honors Physics First or a 90% or higher in CP Physics First.

*Prerequisite: Physics First*

*Open to Grade: 10*

## AP CHEMISTRY

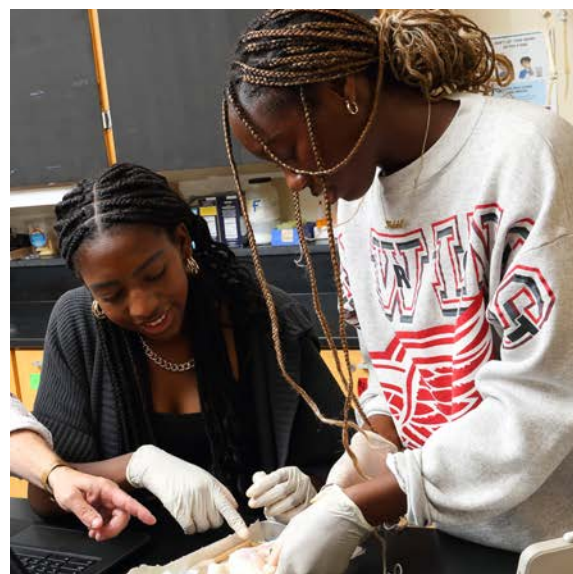
*Full Year*

***This course is offered in alternating years. Therefore it will be offered in the 2023-2024 academic year, but NOT in the 2024-2025 academic year.***

This second-year chemistry course is designed to extend students' knowledge of chemistry and increase their competence in dealing with chemical problems. Topics covered in the first-year course are considered in greater depth; greater emphasis will also be placed on both chemical calculations and the quantitative formulation of principles. Laboratory investigations emphasize experimental design, advanced lab techniques, and the analysis and evaluation of quantitative data. Grades are based upon at-home and in-class work, laboratory work, and in-class assessments. For an added fee, students may take the AP exam in May, or earn college credit via a dual-enrollment program with a local community college. The science department recommends this course for students earning an 87% or higher in Honors Chemistry 1 or a 90% or higher in CP Chemistry 1.

*Prerequisites: Chemistry 1 and Algebra II.*

*Open to Grades: 11,12*



# SCIENCE AND ENGINEERING

## AP PHYSICS 2

Full Year

Designed to be the equivalent to a second-semester college course in algebra-based physics, this course includes fluids; thermodynamics; electric force, field, and potential; electric circuits; magnetism and electromagnetic induction; waves; geometric and physical optics; and quantum, atomic, and nuclear physics. Grades are based on at-home and in-class work, quizzes, projects, laboratory exercises, and tests. Students enrolled in this course are expected to be independent learners and will need to complete substantial amounts of work outside of class. For an added fee, students may take the AP exam in May, or earn college credit via a dual-enrollment program with a local community college. The science department recommends this course for students earning an 87% or higher in their most recent Honors Science course or a 90% or higher in their most recent CP Science course.

*Prerequisites: Students must have taken Physics First or an equivalent course, and must be currently enrolled in Precalculus or have completed a Precalculus course.*

Open to Grade: 11,12

## AP PHYSICS C: MECHANICS, ELECTRICITY AND MAGNETISM

Full Year

***This course is offered in alternating years. Therefore, it will NOT be offered in the 2023-2024 academic year, but will be offered in the 2024-2025 academic year.***

This course is intended for students who plan to major in the physical sciences or engineering. This course will briefly review key concepts in kinematics and Newtons' Laws, then cover impulse & momentum, work & energy, circular and rotational motion, electrostatics; conductors, capacitors and dielectrics; electric circuits; magnetic fields; and electromagnetism. Grades are based upon at-home and in-class work, quizzes, projects, laboratory exercises, and tests. Students enrolled in this course are expected to be independent learners and will need to complete substantial amounts of work outside of class. For an added fee, students may take the AP exam in May, or earn college credit via a dual-enrollment program with a local community college. The science department recommends this course for students earning an 87% or higher in their most recent Honors Science course or a 90% or higher in their most recent CP Science course.

*Prerequisites: Successful completion of Physics First AND concurrent enrollment in or completion of AP Calculus AB or BC.*

Open to Grade: 11,12



# SCIENCE AND ENGINEERING

## WAVES AND SOUND

*Not offered 2023-2024 Academic Year*

This course will provide an introduction to the physics of oscillations, waves, and sound. We will learn some general principles of oscillations and waves, and then examine applications such as music, communications, and civil engineering. The course will be taught primarily through hands-on activities and observations of real-life systems, including labs such as measuring the speed of sound and light waves, determining resonant frequencies of macroscopic systems (like windows or playground swings), and designing musical instruments. Assessments include a detailed laboratory notebook, quizzes, tests, projects, and a research project for exhibit in the annual science and engineering exposition (SEE).

*Prerequisite: Two years of high school science.*

*Open to Grade: 11,12*

## MODERN PHYSICS

*Not offered 2023-2024 Academic Year*

This course will provide students with an introduction to some of the most beautiful ideas in modern physics - special & general relativity, quantum mechanics, and particle physics. We will learn the basics of these ideas, while simultaneously learning more about how modern science works and how these ideas manifest in the universe and in modern technology. Applications may include black holes and gravitational lensing, quantum computing, the standard model, supernovae and cosmic rays. Assessments will include quizzes, tests, projects, and a student-designed exhibit in the annual science and engineering symposium (SEE).

*Prerequisite: Two years of high school science.*

*Open to Grade: 11,12*

## LIFE SCIENCES

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### COLLEGE PREP BIOLOGY 1

*Full Year*

The Biology 1 course connects six major areas of life science-ecology, evolution, genetics (classical and molecular), biochemistry, cellular biology, form and function of plants and animals-to the sensibility that living organisms can be understood through the scientific method. As in our Physics First and Chemistry program, students will learn principally through active collaboration, experimentation, modeling, and real-time analysis of data rather than by memorization. Some units will be structured using a modular component, where students may explore independently, choosing from a variety of "demonstrations of learning" to extend and share their knowledge about particular topics. Students are also expected to complete an independent research project that will be presented at the annual Science and Engineering Exposition (SEE).

*Prerequisite: Physics First, Chemistry 1*

*Open to Grade: 11,12*



# SCIENCE AND ENGINEERING

## LIFE SCIENCES

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### COLLEGE PREP BIOLOGY 1

*Full Year*

The Biology 1 course connects six major areas of life science-ecology, evolution, genetics (classical and molecular), biochemistry, cellular biology, form and function of plants and animals-to the sensibility that living organisms can be understood through the scientific method. As in our Physics First and Chemistry program, students will learn principally through active collaboration, experimentation, modeling, and real-time analysis of data rather than by memorization. Some units will be structured using a modular component, where students may explore independently, choosing from a variety of “demonstrations of learning” to extend and share their knowledge about particular topics. Students are also expected to complete an independent research project that will be presented at the annual Science and Engineering Exposition (SEE).

*Prerequisite: Physics First, Chemistry 1*

*Open to Grade: 11,12*

### BIOLOGY 1 HONORS

*Full Year*

Biology 1 Honors follows the same core topics as Biology 1 but includes more elaborate laboratory experiments and mathematical analysis of data. Biology 1 Honors students will also produce an independent project for the annual Science and Engineering Expo. The science department recommends this course for students earning an 87% or higher in their most recent Honors Science course or a 90% or higher in their most recent CP Science course.

*Prerequisite: Physics First, Chemistry 1.*

*Open to Grade: 11,12*

### AP BIOLOGY

*Full Year*

This course is designed to be the equivalent of a general, first-year college course. It differs qualitatively from Biology 1 with respect to the textbook, the number and kinds of topics covered, the emphasis on statistical calculations, and the nature of the laboratory work. Grades are based upon at-home and in-class work, quizzes, projects, laboratory exercises, and tests. Students are also expected to complete an independent project that will be presented at the annual Science and Engineering Exposition (SEE).

For an added fee, students may take the AP exam in May, or earn college credit via a dual-enrollment program with a local community college.

The science department recommends this course for students earning an 87% or higher in Honors Biology 1 or a 90% or higher in CP Biology 1 (or an approved transfer equivalent). Students wishing to take AP Biology as a first-year high school Biology course must demonstrate their readiness by successfully completing an approved summer study program and passing an August entrance evaluation; for these students, AP Biology will satisfy the Biology course requirement in lieu of Biology 1. Current choices for summer study include a department-designed self-study course and the summer Biology course offered by One Schoolhouse.

*Prerequisite: Students must have successfully completed Chemistry 1 and Biology 1 OR successfully completed Chemistry 1 and summer study, including completion of the entrance evaluation.*

*Open to Grade: 11,12*

# SCIENCE AND ENGINEERING

## AP ENVIRONMENTAL SCIENCE

*Full Year*

This course provides students with a learning experience equivalent to that of an introductory, half-year college course in environmental science. Students explore interactions of living systems with each other and their interactions with the environment through public policy and practice in conservation. Observations and measurements of a stream, statistical analysis of online databases, and the field trips deepen student understanding of human-environment relations. Grades are based upon at-home and in-class work, laboratory reports, and tests. Students are also expected to complete an independent project that will be presented at the annual Science and Engineering Exposition (SEE).

For an added fee, students may take the AP exam in May, or earn college credit via a dual-enrollment program with a local community college. The science department recommends this course for students earning an 87% or higher in their most recent Honors Science course or a 90% or higher in their most recent CP Science course.

*Prerequisite: Chemistry 1*

*Open to Grade: 11,12*

## ANATOMY AND PHYSIOLOGY - CP/HONORS

*Full Year*

Anatomy and Physiology provides an introduction to the human organism with an emphasis on balance-the balance between organ systems, between movement and support, between reproduction and genetics, and between humans and microbes. The laboratory component focuses on dissections of various organisms. Assessments include quizzes, tests, projects, laboratory reports, and a research project for exhibit in the annual Science and Engineering Exposition (SEE).

*Prerequisite: Students must be concurrently enrolled in Biology or have completed a Biology course.*

*Open to Grade: 11,12*

## IMMUNOLOGY AND HUMAN DISEASE - CP/HONORS

*Full Year*

***Not offered 2023-2024 Academic Year***

This course will provide an introduction to the human immune system. Special emphasis will be given to understanding the role of the nonspecific and specific mechanisms of our defenses against infectious diseases, the inflammatory response, the epidemiology of infectious diseases, current hypotheses about allergy and autoimmunity, and the principles of vaccine development. The laboratory component of this course will include an introduction to recombinant DNA techniques (DNA isolation, agarose gel electrophoresis, restriction enzyme digestion of DNA, ligation, transformation, Southern blotting and PCR) used in clinical immunology laboratories, as well as basic bacterial culture, and mathematical models for tracking disease outbreaks. Assessments include a detailed laboratory notebook, quizzes, tests, projects, and a research project for exhibit in the annual Science and Engineering Exposition (SEE).

*Prerequisite: Students must be concurrently enrolled in Biology or have completed a Biology course.*

*Open to Grade: 11,12*

# SCIENCE AND ENGINEERING

## ADVANCED BOTANY - CP/HONORS

*Full Year*

*Not offered 2023-2024 Academic Year*

Students enrolled in this course will be involved in an advanced study of plant biology. The class will start with a broad view of evolutionary relationships between plant groups and related organisms. We will move into the structure and function of plants as well as life-cycle specifics of each major plant group. Plant success will be discussed in relation to soil health, available resources, and plant response to various stimuli. We will also cover the biochemistry of photosynthesis and cellular respiration. Over the course of the semester, students will design and run a plant-based experiment for presentation at the annual Science and Engineering Exposition (SEE). Grading is based on successful completion of homework, lab work, projects, and in-class assessments.

*Prerequisite: Students must be currently enrolled in Biology or have completed a Biology course.*

*Open to Grade: 11,12*

## NUTRITIONAL SCIENCE

*Fall Semester*

Nutritional Science focuses on the science behind what we eat. This class is based heavily on concepts from Life Sciences/Biology since we'll be exploring, among other things, how the human body functions, the biochemistry of macromolecules, and nutrition-related hormone response. Students can expect to be engaged in laboratory/project work involving food/food prep, though most food preparation will be completed at home. We will also explore several different contentious issues concerning sociocultural views related to nutrition including fad diets, plant-based nutrition, and large-scale food production. Grading is based on successful completion of homework, lab work, projects, and in-class assessments.

*Prerequisite: Two years of high school science*

*Open to Grade: 11,12*

## INTRODUCTION TO OCEANOGRAPHY

*Spring Semester*

Introduction to Oceanography centers on the science of marine systems. Oceanography is an interdisciplinary science course, and, therefore, the class will cover aspects of physical, chemical, geological, and biological oceanography. Starting with earth dynamics, ocean circulation, and heat distribution of the earth, the class will aim to explain how the physical, chemical, and geologic nature of the oceans provide an ideal environment for marine life. We will examine several case studies especially as we plumb the depths of the marine biology section. Students should expect to deploy knowledge from Physics, Chemistry, and Biology (though these are not necessarily prerequisites) during the course of the class. Specific topics in class range from, but are not limited to: currents, tides, waves, plate tectonics, ocean chemistry, marine ecology, and climate change. Grading is based on successful completion of homework, lab work, projects, and in-class assessments.

*Prerequisite: Two years of high school science*

*Open to Grade: 11,12*

# WORLD LANGUAGES

The World Languages Department offers courses in French, Spanish, and Chinese, beginning in Middle or Upper School. After an introduction to all three languages in 6th grade, MFS students begin formal study of a chosen language in 7th grade and complete Level 1 in 8th grade. Students are required to complete a minimum course of study through Level 3 in the Upper School. Depending on their background, students new to MFS in grade nine may enroll in Chinese 2, Accelerated French or French 2, Spanish 1/2, or Spanish 2 based on an assessment administered by the MFS language department. New students enrolling in grade ten or higher are placed according to the same procedure.

The World Languages Department uses “communicative” approaches to language acquisition. These approaches shift the emphasis away from verb conjugations and grammar, instead encouraging students to begin speaking the language as soon as possible - often from their first class meeting - in an immersion setting. Explicit grammar and written instruction come later in the process, as needed, when students have already achieved a solid foundation in speaking and listening. Students are exposed to authentic language through stories, native-speaker interviews, conversations, music, and videos. All World Languages courses are taught in the target language.

World Languages courses distinguish between a College Preparatory track and an Honors track beginning at level three (Chinese 3, French 3, Spanish 3). To be considered for the Honors designation, students must demonstrate the following:

- Consistent use of the target language (Chinese/French/Spanish) in class;
- Avoidance of English (without permission);
- Playfulness and willingness to take risks in class;
- Personal responsibility, maturity, and independence;
- A year-end average of 87% or better in their college preparatory course;
- Their current WL teacher’s recommendation;
- Satisfactory completion of an Integrated Performance Assessment (IPA) or other language-specific placement assessment to be given in the Spring.

To stay at the Honors designation from year to year, students must maintain an average of 83% or better, and demonstrate:

- Consistent use of the target language (Chinese/French/Spanish) in class;
- Avoidance of English (without permission);
- Playfulness and willingness to take risks in WL class;
- Personal responsibility, maturity, and independence;
- Their current WL teacher’s recommendation;
- Satisfactory completion of an Integrated Performance Assessment (IPA) or other language-specific placement assessment to be given in the Spring.

In level 4 college preparatory and honors classes, foundational skills are reinforced within the context of speaking, listening, and writing. Students make regular use of cultural materials such as newspaper articles, reading projects, oral presentations, and audio and video presentations on various aspects of the Francophone, Hispanic, or Chinese-speaking world. In level 4 honors courses and higher, outstanding scholars are eligible for induction into the World Language Honor Societies in the spring. For more information see [World Language Honor Society Requirements](#).



# WORLD LANGUAGES

In level 5, students have the option of taking courses at the College Preparatory, Honors, or Advanced Placement level. All students participate in challenging listening, oral, and written language exercises, and study authentic texts. AP courses are the equivalent of first-year college courses and students need strong foundational skills (i.e., strong grades in previous honors courses and a strong teacher recommendation). All students enrolled in these courses may take the AP exam in May, for which there is an additional expense.

## COURSE DESCRIPTIONS

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*Students in all World Languages courses are evaluated on the basis of listening and oral proficiency, homework, quizzes, tests, and final summative assessments. Language acquisition is cumulative and skill-based, and therefore, students must achieve a C (73) average for the year to demonstrate that they are prepared to advance to the next College Preparatory track course. Students ending the year with a grade lower than a C- (72 or below) may either repeat the course the following school year (if the schedule permits) or complete a program of independent summer tutoring approved and supervised by department faculty. For more information see [World Languages Department Policy on Tutoring](#).*

*Each course description corresponds to a level-specific “Can-Do” statement based on the NCSSFL-ACTFL progress indicators for language learners. Progress is identified in the areas of interpersonal communication, presentational speaking, presentational writing, interpretive listening, and interpretive reading. The original NCSSFL-ACTFL publication can be found [here](#).*

## CHINESE

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### CHINESE 2

Chinese 2 is the intermediate level of the Chinese language sequence. Students will learn vocabulary and grammar points related to these topics: learning Chinese, school life, shopping, transportation and weather. By the end of this course, students should be able to interpret topic-related and level-appropriate listening and written materials; students should also be able to make proper responses to complete a conversation or reply an email / letter; in addition, students will be expected to present a short description / personal opinion in both written and speaking form about each topic. In addition to language skills, students will explore Chinese culture on a regular basis.



# WORLD LANGUAGES

## CHINESE 3

Chinese 3 is the intermediate level of the Chinese language sequence. Students will learn vocabulary and grammar points related to these topics: transportation, weather, dining, asking directions, birthday party. By the end of this course, students should be able to interpret topic-related and level-appropriate listening and written materials; students should also be able to make proper responses to complete a conversation or reply an email/letter; in addition, students will be expected to present a description/personal opinion in both written and speaking form about the topics. In addition to language skills, also because this class is aiming for the AP exam, students will explore Chinese culture on a regular basis in Chinese, like brief history, traditions, festivals, music, art and craft, calligraphy, food, etc. They're asked to master some vocab of culture-based topics. Class is taught completely in Mandarin and students are expected to communicate in Mandarin.

## CHINESE 4

Chinese 4 is the advanced level of the Chinese language sequence. The students of Level 4 will learn Chinese language and culture through a series of dialogues and narratives, with culture notes, language use and grammar explanations, and exercises. There will be the following topics that they will learn in this school year: seeing a doctor; dating; renting an apartment; sports; travel; at the airport. By the end of this course, students should be able to interpret topic-related and level-appropriate listening and written materials; students should also be able to make proper responses to complete a conversation or reply an email/letter; In addition, students will be expected to present a short description/personal opinion in both written and speaking form about the topics. Besides language skills, students will explore Chinese culture on a regular basis.

## CHINESE 5/AP CHINESE LANGUAGE & CULTURE

Chinese 5/AP Chinese Language & Culture is the advanced level of the Chinese language sequence. The students of Level 5 will learn Chinese language and culture through a series of dialogues and narratives, with culture notes, language use and grammar explanations, and exercises. There will be the following topics that they will learn in this school year: travel, at the airport, Chinese festival, changes in China, life and wellness. By the end of this course, students should be able to interpret topic-related and level-appropriate listening and written materials; students should also be able to make proper responses to complete a conversation or reply an email/letter; In addition, students will be expected to present a short description/personal opinion in both written and speaking form about the topics. Besides language skills, students will explore Chinese culture on a regular basis.

*Prerequisites: Students selected for AP typically maintain an average of 91% or better in 9-11th grade and meet the above criteria for the Honors designation. Speaking, listening, and writing samples and departmental recommendations are also considered.*

# WORLD LANGUAGES

## FRENCH

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### ACCELERATED FRENCH

This one-year Accelerated French immersion course is intended for three types of student profiles: 1) new students entering MFS in the 9th grade having had little to no French experience, but would like to learn the language, 2) students who after their 8th grade year would benefit from a review of French, 3) juniors or seniors who would like to begin the study of a third language before graduation. Given that our other first year language courses are spread over the 7th and 8th grade years, the pacing of this course will be faster, yet accessible. Students in the class will have a range of previous experiences with French. After taking this class, successful students will be able to: communicate and exchange information about familiar topics using phrases and simple sentences, sometimes supported by memorized language; handle short social interactions in everyday situations by asking and answering simple questions; present basic information on familiar topics; write short messages and notes on familiar topics related to everyday life; understand words, phrases, and simple sentences related to everyday life; and understand familiar words, phrases, and sentences within short and simple texts related to everyday life. Having completed French 1 and 2 in one year, students will then continue on to French 3.

### FRENCH 2

French 2 is the intermediate level of the French language sequence. In this class you will interact in French with your classmates and teacher. You will practice your speaking, reading, writing and listening skills by participating in various class activities, sometimes in pairs or small groups and other times individually. We will explore and better understand Francophone cultures through thematic texts, news, and music. You will expand your vocabulary and learn both formal and informal French. We will focus on grammatical accuracy and pronunciation.

### FRENCH 3

French 3 is the intermediate level of the French language sequence. Students handle short social interactions in everyday situations by asking and answering simple questions using present, past, future, and conditional tenses as well as the subjunctive mood. They make presentations about school, films, important Francophone individuals, and fine art using appropriate conjunctions and logical connectors. They write short scripts to narrate a past occurrence using a series of simple and complex sentences and give directions using the imperative mood. They recreate a French recipe and understand the conventions for dining in various Francophone countries. Finally, students write extended discourse about world challenges and hypothetical solutions using conditional clauses and logical connector words and can understand the main idea in short, simple messages, conversations, and presentations on familiar topics.

# WORLD LANGUAGES

## FRENCH 4

French 4 is the Advanced level of the French language sequence. French 4 Language and Culture is designed for students who wish to continue their study of French at the advanced level while at the same time reinforcing grammatical structures and improving oral and written expression. Speaking, reading, listening, and writing activities will be enhanced. The course will introduce students to several major themes of the French AP Test: personal and public identities; contemporary life; science and technology; global challenges; and family and community. All activities will be based on authentic French materials (articles, literary excerpts, podcasts, and videos). Course objectives are: to demonstrate strong communication skills in speaking and writing in the target language; to develop the ability to understand, interpret, and respond/elaborate on a greater variety of texts and audio materials produced by both native speakers of French and for a French-speaking audience; to expand their knowledge of contemporary French, French institutions and mores; to compare, discuss, analyze or evaluate different perspectives, beliefs, or social practices between their own community and the French-speaking world or communities.

## FRENCH 5 / AP FRENCH LANGUAGE & CULTURE

French 5 / AP French Language & Culture is the advanced level of the French language sequence. In AP French, students review and refine those grammatical structures while learning new vocabulary to communicate in French on a variety of themes: global challenges, science and technology, contemporary life, personal and public identities, families and communities, and beauty and aesthetics. AP French emphasizes all required aspects of the language, as determined by College Board: interpersonal, interpretive, and presentational communication skills. French is used exclusively in the classroom by both teacher and students.

*Prerequisites: Students selected for AP typically maintain an average of 91% or better in 9-11th grade and meet the above criteria for the Honors designation. Speaking, listening, and writing samples and departmental recommendations are also considered.*

## SPANISH

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### SPANISH 1/2

Spanish 1/2 is the first half of a two-year sequence that allows 9th graders new to MFS to complete their world language requirement through level three by the end of 10th grade. It begins at the novice level of the Spanish language sequence. Designed for students with little or no experience in Spanish, this course gives a foundation in authentic oral expression, pronunciation, aural comprehension, reading comprehension, and cultural awareness. Topics are introduced through the text as well as through materials in the target language. This course is a comprehensive approach to learning the fundamental skills and structures in Spanish. Students develop their vocabulary and language skills through communication in Spanish. Students also study various cultural aspects of Spanish-speaking countries through selected readings, videos, oral presentations, and projects.



# WORLD LANGUAGES

## SPANISH 2/3

Spanish 2/3 is the second half of a two-year sequence and it allows 10th graders who have successfully passed Spanish 1/2 to complete their world language requirement through level three by the end of 10th grade. It begins at the intermediate level of the Spanish sequence. Class is conducted entirely in Spanish. Participation and assignments are also completed exclusively in Spanish throughout the year. The students in Spanish 2/3 continue to augment their vocabulary with authentic topics. The course addresses culture in the Spanish-speaking world, especially as it relates to vocabulary and idiomatic expression. Students acquire more nuanced grammatical skills. At the conclusion of the academic year, the student should be able to use the indicative mood to express the future, conditional, past progressive, present perfect and past perfect tenses, the subjunctive mood to express the present, imperfect and compound tenses, as well as commands. Students who successfully complete Spanish 2/3 may continue with Spanish 4.

## SPANISH 2

Spanish 2 is the intermediate level of the Spanish language sequence. The course emphasizes intermediate grammar usage (tense, word order, and agreement) and vocabulary through oral and written communication, focusing on speaking, listening, reading, and writing in Spanish. When appropriate, the course addresses culture in the Spanish-speaking world, especially as it relates to vocabulary and idiomatic expression. By the end of the year, the student should be able to communicate in Spanish on an intermediate level using the present, past (El pretérito y el imperfecto), present progressive, and future tenses; indirect and direct object pronouns; affirmative and negative commands (formal and informal); and the present subjunctive mood.

## SPANISH 3

Spanish 3 is the intermediate level of the Spanish sequence. Instruction is provided entirely in Spanish. Participation and assignments are also completed exclusively in Spanish throughout the year. The students in Spanish 3 continue to augment their vocabulary with precise topics. When appropriate, the course addresses culture in the Spanish-speaking world, especially as it relates to vocabulary and idiomatic expression. Students acquire more nuanced grammatical skills. At the conclusion of the academic year the student should be able to use the indicative mood to express the future, conditional, past progressive, present perfect, and past perfect tenses, the subjunctive mood to express the present, imperfect, and compound tenses, as well as commands.

# WORLD LANGUAGES

## SPANISH 4

Spanish 4 is the advanced level of the Spanish language sequence. This course is taught completely in Spanish and all coursework, without exception, is to be done in Spanish. Spanish 4 is the superior level of the Spanish language sequence. In addition to a rigorous, holistic review of tenses and vocabulary, the course is an intensive study of subtleties of expression in Spanish, including idioms, registers of formality, and differences of denotation and connotation. It emphasizes mastery and refinement of speaking, listening, reading, and writing skills. Students are expected to develop and demonstrate a high level of cultural literacy. Students are exposed to the world of literature and current events in Spanish-speaking countries through authentic materials.

## SPANISH 5/AP SPANISH LANGUAGE & CULTURE

Spanish 5/AP Spanish Language & Culture is the advanced level of the Spanish language sequence. In addition to a rigorous, holistic review of tenses and vocabulary, the course is an intensive study of subtleties of expression in Spanish, including idioms, registers of formality, and differences of denotation and connotation. Upon completion of this course, students should demonstrate a high level of cultural literacy. Students are exposed to the world of literature and current events in Spanish-speaking countries through authentic materials. The class is taught completely in Spanish and all coursework, without exception, is to be done in Spanish. This course is offered with the College Preparatory, Honors, or Advanced Placement designation. Consistent with the standards established by the College Board and the American Council on the Teaching of Foreign Languages, Students enrolled with the AP designation have a learning experience equivalent to that of a third-year college conversation and grammar course, and are assessed accordingly with an emphasis on near-native mastery and refinement of listening, speaking, reading, and writing skills. All students enrolled in the course may take the College Board Spanish Language & Culture Advanced Placement Test.

*Prerequisites: Students selected for AP typically maintain an average of 91% or better in 9th-11th grade and meet the above criteria for the Honors designation. Speaking, listening, and writing samples and departmental recommendations are also considered.*





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# MFS

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