Avon Old Farms School

ONLINE COURSE CATALOG

SAT Prep

Preview & For-Credit Courses

Two-Week Foundational Courses

Updated March 2025

With AOF Online Courses, you can be ready to conquer the academic year this fall.

What We Offer

Avon Old Farms School provides a diverse range of courses tailored to meet the needs of our students. Whether you're gearing up for the Spring Break SAT or seeking an in-depth exploration of academic subjects, we've got you covered.

Browse through our course offerings and discover the pathway to academic achievement that suits your goals and schedule.

Course Title	8-Week Credit	8-Week Preview	4-Week Credit	4-Week Preview	2-Week Prep
Algebra 2/Trigonometry	✓	✓			
Calculus	✓	✓			
Computer Science	✓	✓			
Geometry	✓	✓			
Physics	✓	✓			
Precalculus	✓	✓			
Spanish II	✓	✓			
Approaching US History through Primary Sources			✓	✓	
Calculus C			✓	✓	
Engineering Design			✓	✓	
How to See - An Intro to Art Appreciation			✓		
Trigonometry			✓	✓	
Algebra 1				✓	
SAT Prep: Evidence-Based Reading & Writing				✓	✓*
SAT Prep: Mathematics				✓	✓*
Critical Reading and Note-Taking Skills					✓
Foundational Mathematics Skills					✓
Foundations of Chemistry					✓
Foundations of Living Systems					✓
Introduction to Research Writing for History					✓

**2-Week SAT Prep occurs during March Break.*

COURSE CONTENT

Eight-week courses begin on the Monday of the first full week of June. Check course descriptions for the start dates of four- and two-week courses.

All content will be delivered to the students through videos produced by the teacher. Students are expected to watch these videos and take notes on the content as if they were sitting in a regular, in-person class.

All course information and resources will be provided by the teacher through Google Classroom.

In order to get through all of the material, students will be required to put in approximately 3 hours per day for credit courses and approximately 2 hours per day for preview courses.

These courses are asynchronous, which means that the work can be completed each day when it suits the student. For the 3 hours recommended for a credit course, a student could do 1 hour in the morning and 2 at night to accommodate a job or a local sports camp. However, the student must be able to complete those 3 hours each day and should not expect to be able to leave it all for the weekends, take days off, or go on vacation somewhere for a week without access to the internet and without time each day for the work.

ASSESSMENTS

Eight-week courses will have a midterm exam at the end of the fourth week and a final exam at the end of the eighth. Four-week credit/preview courses will have a final exam at the end of the fourth week.

GRADING

Weekly assignments:	60% for eight-week courses, 80% for four-week courses
Midterm and final exam:	20% each

Students will be required to submit an academic honesty statement with each weekly assignment, the midterm exam, and the final exam.

SUPPORT

Teachers frequently check the progress of their students to ensure that they are on track for success in the course.

Just like our regular classes, students can expect to get additional support from their teachers. This can be done through e-mail, Zoom, phone, etc. Teachers will outline their guidelines on how to get extra help with the material at the beginning of the course.

Eight-Week Courses

Eight-Week Credit Courses

Since the eight week credit classes (same syllabus as the classes offered during the school year) will be covering a year's worth of work in a eight-week class, students are expected to put in approximately three hours per day watching videos and working on assignments. Please refer to the calendar on the right of this page for further information regarding important dates.

Grading is based on weekly assignments and summative exams. Please refer to the FAQ section above for further information. Successful completion will result in a student receiving credit for the course, and it will show up on his Avon Old Farms transcript. Course completion certificates are available for students outside AOF who are seeking credit.

Eight-Week Preview Courses

We will also be offering eight-week courses that preview the full-year. These courses will follow the full-year credit curriculum without requiring graded performance. The purpose of these courses is to help students prepare for an upcoming class in the fall. As with the credit classes, students will complete weekly assignments and take a mid-term and final exam. For the preview courses, students are expected to put in approximately two hours per day watching videos and working on assignments.

- ### Algebra 2/Trigonometry

Dates: June 2 – July 25
(mid-term June 27, final July 25)

This course is a more intensive and extensive study of topics introduced in Algebra 1. The primary objective of the Algebra 2/Trigonometry curriculum is to prepare students for Pre-Calculus or Pre-Calculus Honors. The course is designed to prepare students for college level mathematics and is beneficial for those who will pursue further study in mathematics or related fields. Extensive work is included with equalities, inequalities, absolute value, fractional and negative exponents, radicals, systems of quadratics, and logarithms. The content of the course is organized around families of functions, including linear, quadratic, exponential, logarithmic, radical and rational functions. Students will learn to represent functions in multiple ways, including verbal descriptions, equations, tables, and graphs. Students will also learn to model real-world situations using functions. Graphing calculator skills will be taught and used extensively in this course. Throughout this course, students will develop learning strategies, critical thinking skills, and problem solving techniques to prepare for future math courses.

Prerequisite: Minimum B average (or department approval) required in current math course.

NOTE: Final grade of Algebra 2 SOC will determine fall course placement: AFA (B or below); Precalculus (B+ or above)

- ### Calculus

Dates: June 2 – July 25
(mid-term June 27, final July 25)

This advanced course is an introduction to the fundamental topics comprising calculus. Algebraic, trigonometric, and transcendental functions are studied in the context of differentiation and integration. At the conclusion of this course, students should be able to use calculus methods in a variety of applications and problem solving situations. Students that successfully complete this course are encouraged to take Advanced Placement Calculus.

Prerequisite: Minimum B+ average (or department approval) required in current math course.

- ### Computer Science

Dates: June 2 – July 25
(mid-term June 27, final July 25)

Using the Java programming language, Computer Science develops problem-solving skills, computational thinking strategies, and a deeper understanding of everyday technologies. Students will learn to program by interacting with objects in the Jeroo programming environment before learning the full Java language through explorations of printing, variables, operators, conditionals, loops, and data structures including objects, Strings and arrays.

Lessons are centered around interactive lessons and engaging projects. By the end of the course, students will have a working knowledge of programming and will be prepared for more advanced courses in computer science.

Prerequisite: Minimum B+ average in current math course.

- ### Geometry

Dates: June 2 – July 25
(mid-term June 27, final July 25)

Geometry's primary objective is the study of Euclidean Geometry as a formal, logical system. Where possible, excursions are made into three-dimensional figures and elementary analytic geometry. Some review of algebraic materials may be included. This course begins with developing visualization and some drawing skills. Both algebraic and geometric models are introduced and are further enhanced throughout the course. Proofs are developed slowly in the first half of the course. Various proof formats, including paragraph, flow-chart, and two-column proofs are presented. Students are expected to be actively involved in their own learning. The use of manipulatives is integrated into this course.

Prerequisite: Minimum B average (or department approval) required in current math course.

- ### Physics

Dates: June 2 – July 25
(mid-term June 27, final July 25)

This course is designed with the premise that the study of physics and its application to everyday life are vital to all students. Concepts involving mechanics, electricity, magnetism, and light are developed in a unified and logical sequence. The course shows how physics is related to the other sciences and includes some aspects of the history and philosophy of science. There is no lab component to this course.

Prerequisites: Minimum B+ average in Chemistry. Must have taken Algebra 2/Trigonometry.

- ### Precalculus

Dates: June 2 – July 25
(mid-term June 27, final July 25)

The primary objective of the precalculus curriculum is to prepare students for calculus. Integral to the learning process is the systematic review of earlier concepts learned in Algebra 2 and/or Advanced Math and procedures in which students use previously learned skills to develop proficiency with more advanced concepts, especially trigonometry.

Prerequisite: Minimum B+ average (or department approval) required in current math course.

- ### Spanish II

Dates: June 2 – July 25
(mid-term June 27, final July 25)

This course is designed to further develop and strengthen students' communicative skills in Spanish, with a focus on aural comprehension, speaking, reading, and writing at a novice level. Given the rigorous and accelerated nature of the summer course, students are expected to meet twice a week to practice their speaking skills and to keep up with new content and written assignments weekly. Classes are organized asynchronously and diligent work is expected to consolidate the skills required to attain an intermediate level of Spanish. Students will be using authentic cultural resources and will engage in meaningful interaction to enhance their proficiency. Attention is also given to the cultures and heritages of the Spanish-speaking world as the course rests upon the premise that language is largely cultural and it can only be learned through familiarity with the culture(s) that speak it. This course is targeted to students that need to consolidate an elementary level of proficiency in Spanish, students aspiring to be placed on the Spanish honors track, and students pursuing full credit for Spanish II.

Prerequisite: Minimum B+ average in Spanish I, or department approval.

Four-Week Courses

The four week credit and preview courses are designed to provide intensive instruction in certain specific areas of study that support or augment the course work in a year-long course. Like the eight-week courses, there will be weekly problem sets with 2-3 hours of daily asynchronous work of video watching and practice necessary to complete the sets. At the end of the four weeks, there will be a final exam. These are half credit (.5) courses that will appear on the student's transcript if the course is taken for credit.

- **Approaching US History through Primary Sources** **Course For Avon Old Farms Students Only*

Dates: July 27 – August 22 (Final Exam August 22)

The online course in United States History uses the themes and events of the first periods of U.S. history (from the pre-Columbian Period through the Market Revolution) to introduce students to the historical thinking skills emphasized in the year-long U.S. History course. By focusing on and analyzing both primary and secondary sources, students will learn how to judge the efficacy of their sources and how to use them as evidence to support an historical argument. They will learn and practice a historical method that includes the concepts of cause and effect, comparison, continuity and change over time, and periodization.

The course will also serve to prepare students for the year-long Advanced Placement U.S. History course. Students will become familiar with the requirements of the A.P. program and develop a level of comfort with the types of questions asked on the A.P. exam.

Assignments will involve reading and analyzing primary (and some secondary) sources, and assessment will consist of practice Document-Based Questions, Long Essay Questions, Short Answer Questions, and Multiple Choice Questions.

- **Calculus C**

Dates: July 28 - August 22 (Final Exam August 22)

The 4-week Calculus C course covers concepts of the later part of AP BC Calculus. Students will see the use of integral calculus along with differential equation concepts. Particularly, students will work through BC-level integration techniques of integrating by parts (repeated and terminating), partial fraction decomposition, trigonometric substitution and improper integrals. Polar and parametric equations along with their derivatives and integrals will be introduced, as well as a look at numerical approximation with Euler's method during the differential equations portion. The course will finish with the Taylor series polynomial where students will be expected to manipulate and derive an approximation using the definition. The course will involve use of a graphing calculator and problem sets that dive deep into the integral calculus portion of AP BC Calculus. Successful completion of this course will prepare students for Multivariable Calculus and Differential Equations.

This course is for Calculus AB students who want to move to post-AP math but lack the C material. Teacher approval required.

- This course can also be taken as a non-credit review course for students moving from Calculus BC to post-AP math.

- **Engineering Design**

Dates: July 28 – August 22 (Final Exam August 22)

Engineering Design provides key elements from Introduction to Engineering Design, a foundational course in our Engineering Program. This course utilizes project-problem-based teaching and learning where students will progress from completing structured activities to solving open-ended problems. Students will learn how to develop a plan, document, and communicate their solutions to engineering problems. Students will also develop technical skills in representing and documenting their designed solutions through using 3D modeling software. Building a real understanding of the role, impact, and practice of engineering is a primary goal of the course. This course is also a pathway to our next engineering course, Manufacturing Engineering.

This course requires the use of CAD software, which works best on Mac and Windows computers and not tablets

or Chromebooks. Additionally, registered students will receive a materials packet with supplies they will need to complete physical projects. Students must register well in advance to receive these materials on time.

- **How to See - An Intro to Art Appreciation**

Dates: June 2 – June 27

This course examines the historical and cultural significance of visual and material culture across time and geography, focusing on how various forms of expression reflect and shape the societies that produce them.

Through lectures, discussions, and independent research, students will analyze works within their historical and cultural contexts, developing skills to interpret and contextualize visual materials using historical inquiry and critical thinking. Students will participate in collaborative activities, including video presentations and discussions on the course's online platform, to share their analyses and engage in thoughtful peer feedback.

By the end of the course, students will have developed

the ability to critically engage with historical artistic artifacts and place them within broader historical narratives, gaining skills that are applicable to museum studies, cultural heritage, and historical analysis.

- **Trigonometry**

Dates: July 2 - July 27 (Final Exam July 27)

This course is an intensive look into this very important part of upper-level high school math. The course begins with the origins of trig in geometry, from similar triangles and the so-called "special" right triangles (30-60-90 and 45-45-90). The introduction of the three primary ratios and solving triangles using "SOH-CAH-TOA" formulas. Once knowledge of the primary ratios is solidified, the introduction of the reciprocal ratios will round out all of the functions. Another primary part of trig, the Unit Circle, will show that the trig functions (all positive values in right triangles) can also be negative values. The Unit Circle, along with the Pythagorean Theorem, will introduce a number of identities that can be used to solve further equations. Deeper study finds the inverse ratios and adapting to more triangle solving, along with graphing and the understanding of the periodic nature of these graphs, another result of the Unit Circle. The Cosine Law and Sine Law, along with the inverse trig functions further the understanding of the subject. The course ends with verification and/or simplification of identities. While the only calculator needed for this course is a scientific calculator, students may find that a graphing calculator may be beneficial.

This .5 credit (half credit) course is designed for the following students:

- Strong Algebra II students who want to take Precalculus in the fall but lack the trigonometry background.
- Strong AFA students who want to take Precalculus in the fall but want to shore up their trigonometry skills.

* **Prerequisite:** To take the course for credit, Minimum of a B+ year-long average or department approval is required.

NOTE: Placement into Precalculus in the fall will be based not only on final grade but also teacher recommendation for credit students looking to advance from Algebra 2 or AFA to Precalculus.

- **Algebra 1** ***Preview Only***

Dates: July 27 – August 22 (Final Exam August 22)

The Algebra 1 Summer Course offers students an accelerated foundation in algebraic concepts and is suitable to be taken before Geometry or Algebra 2 to review algebra skills or before Algebra 1 as a preview. Beginning with essential algebra basics including fractions, real numbers, variables, and algebraic expressions, students will master fundamental principles like combining like terms, applying number properties, and using proper order of operations. The course progresses to linear equations and inequalities, teaching students to solve increasingly complex equations, work with interval notation, and apply these skills to real-world ratio, proportion, and percentage problems. Students then focus on linear functions and continue to develop graphing skills, analyze domain and range, identify function characteristics, and work with various forms of linear equations. This intensive summer program builds both conceptual algebraic understanding and practical problem-solving skills.

Two-Week Courses for Incoming AOF Students

Our two-week preparation courses are designed to provide some review, a head-start, and some support for our newest students as they approach the upcoming school year. These courses will help to "knock the rust off," get boys refocused on academics, and introduce some concepts inherent in prep school academics. Whether you want to review and refresh your learning from last year or get a head-start on some of the upcoming concepts, these two-week classes can help any boy gain some momentum and confidence heading into the new school year.

Students can take all five courses or pick any combination that suits their interests and needs. The first course is $750 and additional courses will be offered at a discounted rate of $500 each.

FIRST SESSION

- **Foundational Mathematics Skills**

Dates: July 27 – August 8

This two-week course is designed for the incoming student who wants to review fundamental Algebra I and geometry skills in preparation for the coming year. The course will cover topics dealing with fractions, exponents, operations with real numbers, algebraic equations, angles, and degrees. Upon successful completion of this course, students will be able to "hit the ground running" in their fall algebra or geometry courses.

This course is recommended for incoming freshmen and new sophomores taking either Algebra 1 or Geometry in the fall.

- **Foundations of Chemistry**

Dates: July 28 – August 8

This two-week online introductory and review course will help prepare students entering chemistry at any level. It can also be a valuable review course for those entering A.P. Chemistry looking to brush up on some of the foundational skills. Over the two weeks of the course, students will be expected to engage with videos and other online resources geared towards: metric conversions, states of matter, atomic structure (naming various types of compounds), introduction to moles, writing and balancing chemical equations, predicting products and basic stoichiometry problems. There will be non-graded assessments to test the student's ability to use the material learned in the course. Upon completion, students will be able to confidently enter a chemistry classroom in the fall with foundational knowledge.

This course is recommended for those entering chemistry in the fall (usually sophomores and juniors).

- **Introduction to Research Writing for History**

Dates: July 27 – August 8

This two-week intensive course will develop skills on how to locate, use, and cite academically certifiable resources as it pertains to research. In addition, the course will provide students with appropriate scaffolding to select/narrow paper topics, create a complex thesis statement, craft introductions, and outline papers. Online tutorials, simulation reading/writing, and internet "scavenger hunts" will aid the student along the way. Reading and comprehension assessments will be administered. Upon successful completion of the course, students will have developed transferable skills for their fall classes and be able to initiate formal research paper writing.

This course is recommended for incoming students in all grade levels.

SECOND SESSION

- ## Foundations of Living Systems

Dates: August 11 – August 22

Embark on a fascinating journey into the intricate world of biology and living systems in this dynamic two-week summer course. Delve into the fundamental principles that govern life and gain a deeper understanding of the complex interactions that shape our natural world.

Throughout the course, students will develop critical thinking skills, scientific inquiry abilities, and teamwork capabilities as they collaborate with their peers to explore and analyze biological concepts and phenomena. By the end of the two weeks, participants will emerge with a solid foundation to begin their year-long Living Systems course as a freshman or sophomore.

This course is recommended for those taking Living Systems in the fall (usually freshmen and sophomores).

- ## Critical Reading and Note-Taking Skills

Dates: August 11 – August 22

This two-week intensive course focuses on the fundamental academic skills necessary for successful students at the prep school level. Over the two weeks, students will be expected to watch videos demonstrating how to: read thoughtfully and critically; annotate the text; and take useful notes. Similarly, readings will be assigned for students to practically apply the skills learned. There will be reading and concept assessments to determine the effectiveness of the students' efforts. Upon completion, students will be able to immediately take the skills learned into their fall courses.

This course is recommended for incoming freshmen and new sophomores.

SAT Courses

Spring Break SAT Prep

We offer 10-day intensive SAT Preparation courses. These include a blend of self-paced learning modules and live interactive sessions to foster a comprehensive understanding of the new digital SAT. In addition to the essential test-taking skills and strategies required for the new digital format, instructors will also offer subject-specific lessons tailored to the content of the new Mathematics and Reading and Writing modules.

Most learning will take place asynchronously, plus two required live sessions led by expert AOF faculty. Students will also have one mandatory meeting with their teachers during Intersession to review their results and make personalized plans for future test prep. Teachers will be available during Intersession for additional one-on-one guidance as necessary.

We recognize that Spring Break is a busy time for many of our students and families. This course will be split into two sections, each of which lasts just 10 days. Students may join one or both sections depending on their interests and needs.

Each course is $300. Or students may take both courses for a discounted total price of $500.

- **SAT Bootcamp: Reading & Writing**

Dates: March 7 – March 16

- **SAT Bootcamp: Mathematics**

Dates: March 15 – March 24

Four-Week SAT Preparation Courses

For Enrolled Avon Old Farms Students Only

We offer SAT Preparation in both the Math and the Evidence-Based Reading and Writing sections. Students can take either course or both together.

Each course is $500. Or you can take both courses for the discounted total price of $750.

These are intensive, rigorous, accelerated programs that will prepare your son for the section in which he needs support or, if taken together, the entire test.

- **SAT Prep: Evidence-Based Reading & Writing**

Dates: August 3 – August 29

This structured four-week intensive course focuses on preparing the students for the Critical Reading portion of the New SAT. Students will create a Khan Academy account within our Avon Old Farms "class" as determined by the teacher. Students will use the Khan Academy videos to identify areas of strength and weakness for further work. Unlike our other courses, this course will have mandatory online sessions on Mondays from 6 - 8 p.m. where students will work with our teacher to focus on skills, get support and guidance, and work one-on-one. There will also be one enrichment time per week as needed. During the rest of the week, students will be expected to continue working with the videos as well as content generated by the teacher focused on each student's individual needs. This course is recommended for rising juniors and seniors.

- **SAT Prep: Math**

Dates: July 27 – August 22

This structured four-week intensive course focuses on preparing the students for the Math portion of the New SAT. Students will create a Khan Academy account within our Avon Old Farms "class" as determined by the teacher. Students will use the Khan Academy videos to identify areas of strength and weakness for further work. Unlike our other courses, this course will have mandatory online sessions on Wednesdays from 6 - 8 p.m. where students will work with our teacher to focus on skills, get support and guidance, and work one-on-one. There will also be one enrichment time per week as needed. During the rest of the week, students will be expected to continue working with the videos as well as content generated by the teacher focused on each student's individual needs. This course is recommended for rising juniors and seniors.