

PRISMS

Princeton International School
of Mathematics and Science

Course Catalog 2025-26

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Mission Statement

Princeton International School of Mathematics and Science immerses a multicultural, self-motivated student body in an integrated STEM–centered curriculum and a research program that identifies and develops each student’s potential. Our approach promotes critical thinking, imagination, and deep curiosity, and enables students to ask meaningful questions and to contribute to a diverse and dynamic world.

Core Values

Respect and love are at the heart of effective teaching. The teacher–student relationship is based on teachers’ respect for their students, and that respect inspires learning and creativity. Devoted teachers love their subject and their craft. Together respect and love lead to the finest and most profound education.



Science, technology, engineering, and mathematics are crucial for the advancement of civilization.



Humanities, world languages, and the fine arts are essential for students to understand and express themselves in the context of the world around them.



Research-based education shapes the adolescent brain in a beneficial way.



Excellent teaching ignites a sense of wonder.



Perseverance is an essential trait for students to develop and nurture.



Integrity is fundamental to a responsible and meaningful life.



The ethical application of knowledge improves our world.



Collaborative and independent learning are both essential for substantive achievement.



The habit of excellence can be developed.



Education should equip students to contribute positively to society.



A healthy body and mind are essential to intellectual development and a productive life.



Table of Contents

| | |
|---|--------------|
| <u>Administration</u> | 1 |
| <u>Mission Statement & Values</u> | 2 |
| <u>Introduction</u> | 4 |
| <u>Academic Policies</u> | 4 |
| <u>Scheduling Policies</u> | 6 |
| <u>Guide to Course Placement</u> | 8 |
| <u>Advanced Placement (AP) Program</u> | 9 |
| <u>Typical Four-Year Sequence</u> | 10 |
| <u>Research and Development Program</u> | 10 |
| <u>Course Descriptions</u> | 12-36 |
| <u>Mathematics</u> | 12 |
| <u>Sciences</u> | 16 |
| <u>Applied Engineering & Computer Science</u> | 23 |
| <u>Humanities and World Languages</u> | 27 |
| <u>Fine Arts</u> | 35 |
| <u>Physical Exercise Requirement</u> | 37 |
| <u>Additional Academic Programs</u> | 37 |
| <u>Princeton University Courses</u> | 37 |

Introduction

This catalog is a reference guide for students attending Princeton International School of Mathematics and Science. The catalog includes a complete guide of course offerings at PRISMS and relevant academic policies that may affect students' course selection.

At PRISMS, we will work with you to create a program of study that matches your aspirations and aptitudes while also building your skills in other areas to develop you into a well-rounded student. You will be encouraged to select courses that you find intellectually stimulating and enriching.

Please familiarize yourself with the contents of this catalog. Any questions can be directed to the Director of Academics or the School Counselor. We look forward to supporting you through your academic journey at PRISMS.

Academic Policies

Course Level and Grade Point Averages (GPA)

Courses at PRISMS are honors level, Advance Placement (AP), post-AP. All courses are unweighted for the purposes of calculating a student's Grade Point Average (GPA). Clubs and activities are not factored into GPAs. Each letter grade corresponds with a numeral equivalent as indicated in the following table:

| Letter Grade | Grading Scale | GPA |
|--------------|---------------|-----|
| A | 93-100 | 4.0 |
| A- | 90-92 | 3.7 |
| B+ | 87-89 | 3.3 |
| B | 83-86 | 3.0 |
| B- | 80-82 | 2.7 |
| C+ | 77-79 | 2.3 |
| C | 73-76 | 2.0 |
| C- | 70-72 | 1.7 |
| D+ | 67-69 | 1.3 |
| D | 64-66 | 1.0 |
| F | 63 & Below | 0.0 |

Quarterly grades only appear on mid-term and semester report cards. Students' permanent transcripts reflect only the final grade for each course.

Rank In Class

PRISMS does not record a class rank on students' transcripts. PRISMS students regularly meet the challenge of their rigorous course loads, so keeping a class rank would not be an insightful statistic on any student's performance, would drive unnecessary competition, and would disrupt the community. Therefore, we have chosen not to record any class rank.

Graduation Requirements

| Minimum Credit Requirement for Graduation | |
|---|---|
| Domestic Students 26 Course Credits | International Students 23 Course Credits |
| Notes | <ul style="list-style-type: none"> Domestic Students: US citizens and permanent residents International students eligible for language waiver. Full year courses yield 1 credit. Semester courses yield 0.5 credits. |

Graduation Requirement Credit Breakdown

| Math and Sciences 11 Credits | | | | | |
|---------------------------------|--|-----------------------|---------------------|------------------------------|-----------------------------|
| Mathematics 4 credits | Biology 1 credit | Chemistry 1 credit | Physics 1 credit | Computer Science 1 credit | STEM Electives 3 credits |
| Notes | <ul style="list-style-type: none"> 9th Grade: BASE Program required. All students must successfully complete Calculus. All students must successfully complete at least the Honors level of each core science. At least one STEM elective must be at the Advanced Placement (AP) level. | | | | |

| Research and Development 4 Credits | |
|---------------------------------------|-----------------------|
| Applied Engineering 2 Credits | Research 2 Credits |
| Notes | |

| Humanities 11 Credits | | | | |
|--------------------------|---|-----------------------------|-----------------------|---------------------------------|
| English 4 Credits | History 2 Credits | World Language 3 Credits | Fine Arts 1 Credit | Humanities Elective 1 Credit |
| Notes | <ul style="list-style-type: none"> History Sequence: AP World History (10th grade); AP United States History (11th grade). Int'l Student World Lang. Waiver: Students for whom English is their second language are eligible to have their World Language requirement waived. If waived, these students may schedule three additional electives in any area or extra study halls for additional time to complete their homework, most of which will be in the English language. | | | |

Transferring Credit

Students who transfer into PRISMS for grade 10 or higher will have their transcripts reviewed upon entry into PRISMS. Approved credits from their previous school(s) will be posted to the PRISMS transcript, but will NOT be utilized for calculation into their cumulative GPA. Not all credits may be eligible to satisfy graduation requirements. When planning their program of study, transfer students should consult with the guidance counselor regarding which graduation requirements have been satisfied by prior credits.

Transfer students who choose to repeat one or more grade levels at PRISMS shall have the respective academic years marked as “repeat” on their transcripts.

Coursework taken prior to grade 9, no matter the course level, will not be eligible for transfer.

Coursework taken at online programs, foreign study programs or summer programs will not be accepted as credit toward graduation.

Transfer Exemptions

Students who transfer into PRISMS for grade 10 or 11 may have adjusted graduation requirements based on their previous education history. Please see the Director of Academics or guidance counselor for more details.

Scheduling Policies

The PRISMS Scheduling Team is excited to offer students an exciting range of courses, from those that build fundamental skills to specialized, college-level subjects. While the scheduling team tries its best to accommodate students’ top choices, it may not always be possible to accommodate all requests (for example, course demand surpasses the available seats, or a course is cancelled due to lack of demand). PRISMS’s top priority is to maintain appropriate class sizes so that our teachers can provide the best learning experiences to their students, so students are always advised to provide one to two backup courses when they submit their course requests.

Minimum Scheduling Recommendation

PRISMS students are advised to take a minimum of 6 credits per year. Students should refer to the course sequence chart below. All students will be scheduled for 1 study hall/free period.

Post-AP Electives

Students are limited to 1 post-AP elective per subject per year. Students who show exceptional talent in a given area may request to take 2 post-AP electives in the same subject in the same year. Only students in grades 11 and 12 are eligible to make this request.

Requests must be approved by the Academic Team. Decisions are final. Interested students must submit an application to the Director of Academics by end of March.

Course Changes

When the initial schedule is released in the summer, students will have two weeks between August 4 and August 15 to submit requests for course changes. After this period is over, student schedules will be finalized for the remainder of the summer. Additional course change requests will not be accepted until the start of the school year and trial period.

Course change requests will be considered only when an open seat is available in the requested course. Maintaining appropriate class sizes takes priority over course change requests. No course change requests may be made after the trial period has ended. During the trial period, students must continue attending their course until a drop or change is approved.

Course Level Change

With the recommendation of a teacher, students may request a course level change at the end of the school year, prior to the summer. Students will be asked to take a placement test in order to determine whether the student demonstrates readiness for the requested level in late May.

During the trial period, only teachers and/or the department may initiate a course level change. Coursework from summer programs may not be used as proof of readiness to initiate a course level change during the trial period.

Course Trial Period

Students have a trial period, beginning on the first day of classes and ending Friday of the second week of classes, when they can request to change their courses. If a course request cannot be accommodated, a student can choose to remain in the original course or to drop the course, provided that the change does not drop the student below the minimum credit course load. After the trial period is over, any course drop request will be considered a course withdrawal and will affect the student's permanent academic record.

Course Withdrawals

Students may choose to withdraw from courses within the following timeline:

- Yearly Courses – No later than last day of the 2nd marking period.
- Semester Courses – No later than the last day of the 1st or 3rd marking period.

Any student who withdraws from a course will be removed from the class roster and a record of “W” will be recorded on the student's transcript.

Guide To Course Placement

The PRISMS course curriculum is rigorous and intended to provide our talented students the opportunities to learn advanced subject material. Courses begin at the honors level and progress through AP and post-AP levels. Students have found that our courses differ from other high schools in the level of expectation of independent work, depth of subject material covered, and pace of class. While we know that our students are tremendously talented, we encourage our students to consider their selection of courses carefully in relation to their interest and ability. Student should also seriously consider what they can handle without creating undue stress and overburdening themselves.

Course Level Description

- **Honors** – PRISMS classes begin at honors level. Honors level courses follow a rigorous curriculum designed to give a broad introduction to the subject and prepare students for taking AP level classes.
- **Advanced Placement** – AP classes follow (but are not limited to) the CollegeBoard curriculum and prepare students for taking post-AP electives.
- **Post-AP** – Post-AP courses are the highest level of classes at PRISMS, meant to cover college level content.

Course Eligibility

Students who have completed the listed prerequisites in the course catalog for any given course are eligible for that course. Students who have taken an alternative equivalent of the listed prerequisite(s) must receive teacher approval or take the placement test during the placement testing period to become eligible for that course.

Placement Testing for New Students

Prior to entering PRISMS, new students will take placement tests in accordance with their course requests. Students may be tested on readiness in math, science, computer science, or language courses.

New students whose previous school follows a US-based curriculum may place directly into the next level math course if their course level can be verified through their prior school's transcript. New students whose previous school follows a non-US curriculum must take placement tests to determine their course level for the respective subject.

Placement Testing for Continuing Students

Continuing students who request a course level change to advance in course level for the next academic year must take a placement test at the end of the current academic year.

Advanced Placement (AP) Program

AP Test Policy

Students who take AP courses are required to take the coinciding AP exam. Students in Advanced-level language courses are not required to take the respective AP exam, although they can choose to take the exam if their teachers identify that they are ready to do so.

AP Self-Study Policy

Students are welcome, but not encouraged to self-study for AP exams.

Students may only request to take an AP exam via self-study if the course is not offered at PRISMS. Students interested in taking an AP exam that is a part of the PRISMS curriculum must take the course itself.

If a student chooses to self-study for an AP exam, it is strongly recommended that students self-study for only one AP exam per year.

Students who self-study for AP exams should be aware that they are missing important classroom labs and activities that make up the intended learning experience for that AP course content. Because they do not receive instruction through an associated course, they are responsible for preparing themselves for these exams and are expected to create and manage their own study plan throughout the school year.

Students who wish to self-study for an exam must notify the school counselor during the AP exam registration period. Students will receive access to the AP Classroom, but will not have access to practice assignments that normally accompany those AP courses.

Students will NOT earn high school credit when self-studying for AP exams.

Typical Four-Year Sequence

| 9th Grade | 10th Grade |
|---|--|
| <ol style="list-style-type: none"> 1. English 2. Mathematics¹ 3. H Biology 4. H Physics or H Chemistry² 5. Applied Engineering 1 6. World Language³ or Elective 7. Elective⁴ or Extra Study Hall | <ol style="list-style-type: none"> 1. English 2. Mathematics 3. H Physics or H Chemistry⁵ 4. AP Science⁶ 5. Applied Engineering 2 6. AP World History 7. World Language or Elective⁷ |
| 11th Grade | 12th Grade |
| <ol style="list-style-type: none"> 1. English 2. Mathematics 3. STEM Research 1 4. AP U.S. History 5. World Language or Elective⁷ 6. Elective 7. Elective | <ol style="list-style-type: none"> 1. English 2. Mathematics 3. STEM Research 2 4. World Language or Elective⁷ 5. Elective 6. Elective 7. Elective |

1. Entry math level will be determined by transcript evaluation and, if needed, a math proficiency test administered by PRISMS.
2. All freshmen are required to take Honors Biology and must select either Chemistry or Physics as a second 9th Grade science. Students who choose Physics must pass a math placement to be accepted into the course.
3. Students whose primary language is not English are not required to take a World Language, though they may elect to do so.
4. Students interested in Computer Science courses are advised to take Fundamentals of Computer Science in 9th Grade.
5. All students should take the third Honors-level science in 10th Grade but are allowed to take Honors Physics in 11th grade with the approval of the Academic Team.
6. The options available include AP Biology, AP Chemistry, AP Physics, AP Computer Science, and AP Environmental Science. For students who have interest in research in these areas, these AP courses serve as stepping stones to post-AP and research courses in the respective fields.
7. Research lab directors may require students to use an 11th Grade Elective to take a post-AP science course related to the research projects.

Research & Development Program

A core feature of the PRISMS educational experience is a four-year STEM research and development program threaded through our four-year high school curriculum. Our aim is that students begin by learning research skills in order to better prepare them for meaningful STEM research or development projects in grades 11 and 12. In grade 9 all our freshmen participate in the Bridging the Arts Science and Engineering (BASE) Program. In grade 10 all students are required to take Applied Engineering 2 which builds on the 9th grade Applied Engineering 1 Program by offering research skills in the form of practical

problem-solving: design, build and test. Scientific Research skills that build on the BASE Program, skills such as statistics, experimental design, literature review, are incorporated into required 9th and 10th grade science courses.

Core Research Courses

BASE Program: Bridging the Arts, Science, and Applied Engineering (Grade 9)

Our foundational research program is known as BASE (Bridging the Arts, Science and Engineering). Our aim is to give all our freshman a common experience where they not only learn important foundational content in Biology, Literature, and Applied Engineering, but they also learn about the multi-disciplinary nature of research, collaboration, cooperation and are introduced to important research skills like: Forming a valid question, reviewing and evaluating research literature, designing an experiment, analyzing data, communicating research or development findings.

Applied Engineering 2 (Grade 10)

Applied Engineering 2 further prepares students for substantive research conducted during their Junior and Senior years. Throughout the course, practical problem-solving skills are developed which benefit STEM research, regardless of focus or discipline. These skills include, but are not limited to:

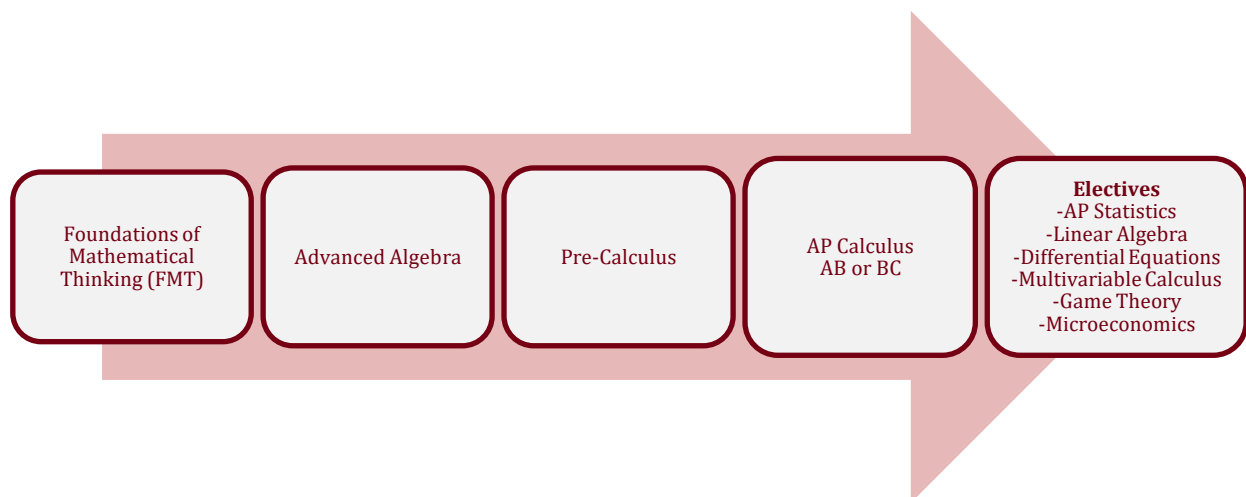
- Analog and digital electronics
- Microcontroller applications and programming
- Spatial visualization/awareness
- Design and manufacturing
- Data acquisition and analysis
- Mechanics
- Robotics

Research & Development Labs

In grades 11 and 12 (typically after completing the *BASE program, Honors Chemistry, Honors Physics, and 10th grade Applied Engineering 2*), students can choose a topic in which to conduct research within one of our STEM Research and Development areas. Typically a student will begin working on a project in the 11th grade and continue it into the 12th grade.

Course Descriptions

Mathematics



Core Mathematics Courses

Foundations of Mathematical Thinking (FMT)

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 9

Course Level: Honors

||

Description: This original course was created to give freshmen the broadest overview of mathematics. It offers students strong core knowledge of mathematics, as it explores connections between different mathematical disciplines. This course involves the study of the techniques and language of mathematics that are essential for students to comprehend and solve real world situations. FMT encompasses numerous mathematics fields, merging the traditional Algebra 1 and Geometry courses into one, and is taught at a faster pace and in more detail than a standard freshman (9th grade) mathematics course. The FMT course is open to students who are starting their first year in PRISMS.

Prerequisites: None

Advanced Algebra

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 9-10

Course Level: Honors

||

Description: Advanced Algebra is the second course in PRISMS sequence. Having covered the foundational algebra topics in FMT course, students are now able to move on to a more rigorous study of algebra. This course emphasizes the thorough study of functions, focusing on function properties, behavior, graphs and applications. Advanced Algebra also covers polynomials, including operations on polynomials, factoring and solving for roots. Combinatorics is introduced by Pascal's triangle and the explicit and recursive formulas for sequences are studied. Emphasis is placed on nurturing analytical and problem-solving skills and students are encouraged throughout the course to think independently.

Prerequisites: Foundations of Mathematical Thinking or equivalent

Pre-Calculus

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 9-11

Course Level: Honors

||

Description: Pre-Calculus builds upon the knowledge of functions and problems solving techniques introduced in Advanced Algebra, and prepares the student for the challenges of Calculus. The course begins with a study of functions from a Calculus perspective. We explore such topics as continuity, end behavior, extrema, and average rates of change. We then partake in a thorough study of trigonometry, including definitions, laws, proofs, graphs, and applications to triangles and the unit circle. As an extension, we investigate the polar coordinate system, conic sections, vectors, and complex numbers. Additionally, we investigate matrices and their applications, as well as an introduction to the basic calculus concepts of derivatives and integrals.

Prerequisites: Advanced Algebra

AP Calculus AB

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 10-12

Course Level: AP

||

Description: This course is a standard Calculus course. An initial study of functions and limits leads to the study of the derivative and differentiation techniques. The relationship between a function and its derivative is carefully developed. Applications of the derivative include local and absolute extreme values. The concepts of the antiderivative and slope fields are introduced. The concept of the integral is formally defined and elementary techniques of integration are studied. The Fundamental Theorem of Calculus is explored and applied. The applications of definite integrals are studied, including finding volumes, and average values of functions.

Prerequisites: Pre-Calculus

AP Calculus BC

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 10-12

Course Level: AP

||

Description: This is a standard, college level calculus course, in which we will convey the excitement of the new concepts one can learn from this branch of mathematics. In this course, students study functions, limits, derivatives, integrals, and infinite series. Calculus helps scientists, engineers, and financial analysts understand the complex relationships behind real-world phenomena. Students in this course learn to evaluate the effectiveness of proposed solutions and apply mathematical reasoning to real-world models. Students also learn to understand change geometrically and visually (by studying graphs of curves), analytically (by studying and working with calculus formulas), numerically (by seeing pattern and convergence property of series), and verbally. By learning this course, students can prepare for the AP Calculus BC Exam and further studies in mathematics, science, and engineering.

Prerequisites: Pre-Calculus

Elective Mathematics Courses

AP Statistics

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 11-12

Course Level: AP

||

Description: AP Statistics involves the study of four main areas: 1. Exploring Data: Describing patterns and departures from patterns; 2. Sampling and Experimentation: Planning and conducting a study; 3. Anticipating Patterns: Exploring random phenomena using probability and simulation; 4. Statistical Inference: Estimating population parameters and testing hypotheses. This AP Statistics course is taught as an activity-based course in which students actively construct their own understanding of the concepts and techniques of statistics.

Prerequisites: AP Calculus

Linear Algebra

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 11-12

Course Level: Post-AP

||

Description: This college-level course will introduce the matrix theory and basic knowledge of linear algebra, including the study of systems of linear equations, Gaussian elimination, the basic knowledge of vector spaces, linear dependence, linear transformations and matrix representation, the study of matrices, orthogonal reduction, determinants, eigenvectors and eigenvalues, and a variety of applications.

Prerequisites: AP Calculus (“A-” or higher)

Note: To succeed in this course, you need to be comfortable with vectors, matrices, and three-dimensional coordinate systems

Differential Equations

Duration: Semester (Fall)

Credits: 0.5

Recommended Grade Level: 11-12

Course Level: Post-AP

||

Description: This course focuses on ordinary differential equations and their applications in science and technology. Topics studied include: first-order ordinary differential equations (ODEs), higher-order ODEs, Laplace transforms and Fourier series, linear and nonlinear systems, numerical approximations, series solutions (Frobenius method). Applications are embedded throughout, since the goal of the course is to give the students the tools to solve practical differential equations (e.g., Newton's equations for bodies subjected to various forces).

Prerequisites: AP Calculus BC (“A-” or higher)

Multivariable Calculus

Duration: Semester (Spring)

Credits: 0.5

Recommended Grade Level: 11-12

Course Level: Post-AP

||

Description: Multivariable calculus is the extension of calculus to more than one variable. Topics studied include: vectors, matrices and system of equations, parametric curves,

introduction to partial derivatives, Lagrange Multipliers and constrained differentials, double integrals and line integrals in the plane, triple integrals and surface integrals in 3-space.

Prerequisites: AP Calculus BC (“A-” or higher)

Game Theory

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 12

Course Level: Post-AP

||

Description: Game theory is the study of strategic interactions with probabilistic derivation and mathematical modeling. It is not only very fun to ponder upon, but also is at the core of many computer science, economics, and business research projects. This full-year course will start by exploring the theorems and definitions behind the famous prisoners’ dilemma game, leading to more general zero-sum and two-person game examples with probabilistic mixed optimal strategies. This course will also cover more extensive and complicated games, such as continuous, repeated, or imperfectly informed games, more shallowly, alongside their real-world applications, such as interpreting ecological dynamics, analyzing market signals, or even winning a game of poker. The most famous concept in Game Theory is the Nash Equilibrium, developed by John Nash, a mathematician who won the Nobel Prize, and worked and lived in Princeton!

Prerequisites: AP Statistics and Linear Algebra

Microeconomics

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 11-12

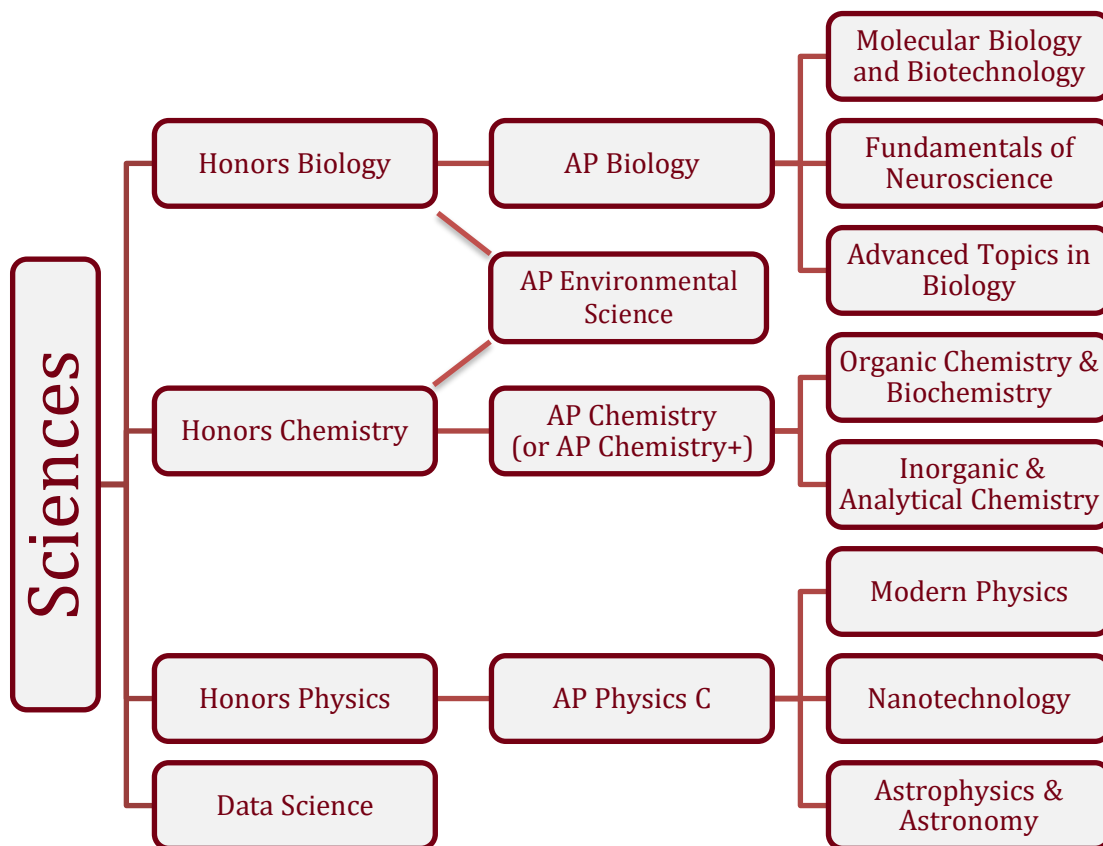
Course Level: Post-AP

||

Description: The first half of this course would completely follow the college board AP microeconomics syllabus. We introduce basic economic concepts on a single-market level (in contrast to Macroeconomics), including supply and demand, production and cost, imperfect competition, factor markets, and the role of government in market failures. In these modules, students would develop the essential skills to define economic principles, determine and explain the outcomes of specific economic markets, and model microeconomic situations using graphs and visual representations. In the second half of this course, we follow college-level course standards, and leverage calculus to delve deeper into consumer theory, producer theory, general equilibriums, and asymmetric information. The addition of this class would fill a hole in our existing AP curriculums and give students who are interested in both mathematics and social studies an opportunity to systematically connect their knowledge in these two fields.

Prerequisites: AP Calculus BC

Sciences



Core Science Courses

Honors Biology

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 9

Course Level: Honors

||

Description: Honors level freshman Biology course at PRISMS is an intense introductory course that equips students to think seriously about science. The course focuses on cellular processes found in living organisms (cell cycle, cell structure and function, and metabolism), genetics, molecular biology (DNA replication and protein synthesis), the biological basis of evolution, and ecology. Laboratory work is an integral part of this course. Honors Biology requires strong study skills and an ability to work independently and in small study groups. Research skills covered in Honors Biology will include descriptive statistics, basic principles of experimental design (such as randomization, blocking, etc.), and essential lab notebook skills.

Prerequisites: None

Note: The PRISMS BASE Program is required for all 9th grade students

Honors Chemistry

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 9-10

Course Level: Honors

||

Description: The Honors level Chemistry course at PRISMS is a study of the structure, behavior and properties of matter. Topics include: dimensional analysis, significant figures, stoichiometry, solutions, gases, thermochemistry, atomic structure and nuclear chemistry, electronic structure and periodicity, chemical bonding and intermolecular forces, basic chemical kinetics and equilibrium, acid-base chemistry, and electrochemistry. Students are expected to have a strong foundation in algebra. Research skills covered in Honors Chemistry include data analysis and graphing, scientific writing, and more advanced aspects of lab notebook completion.

Prerequisites: None

Honors Physics

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 9-10

Course Level: Honors

||

Description: Honors Physics is a non-calculus based conceptually and mathematically rigorous first year university preparatory course. The course design requires students to develop a solid background in the conceptual basis of physics, as well as strong critical thinking and problem solving skills. The course is a comprehensive treatment of the topics of mechanics, electricity and magnetism, and waves and oscillations. When time allows, other topics in thermodynamics or modern physics may be treated on an instructor-specific basis. Laboratory-centered, the course exposes students to the methods of scientific inquiry. Research skills developing during the class include: basic experimental design, data collection and analysis, error analysis, peer-review system, graphical representation of data, preparing of a basic scientific report, and oral presentations.

Prerequisites: Placement test required for incoming freshmen. Students may take the course in 11th grade with the approval of the Academic Team.

Elective Science Courses

AP Biology

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 10-12

Course Level: AP

||

Description: This college-level course is recommended for students who intend to major in biological sciences such as biochemistry and/or medicine. AP Biology provides students with the conceptual framework, factual knowledge, and analytical skills necessary to critically handle the rapidly changing science of biology. The emphasis of this laboratory course is to develop an understanding of concepts and of science as a process rather than an accumulation of facts.

Prerequisites: Honors Biology (“B” or higher)

Molecular Biology and Biotechnology

Duration: Full-Year

Recommended Grade Level: 11-12

Credits: 1.0

Course Level: Post-AP

||

Description: This is an advanced, lab intensive course in which students apply modern molecular biology techniques to explore aspects of cell biology and biotechnology. Students will perform numerous techniques during the course, including PCR, bacterial transformation, gel electrophoresis, SDS-PAGE, Western Blot, protein purification and chromatography, and RNA purification and quantification. The course uses the lab techniques as a means to develop a student's understanding of molecular processes and not simply to learn a given lab technique.

Prerequisites: AP Biology ("A-" or higher)

Fundamentals of Neuroscience

Duration: Full-Year

Recommended Grade Level: 11-12

Credits: 1.0

Course Level: Post-AP

||

Description: This full year course explores the structure and function of the nervous system—from the inner workings of a single nerve cell to the staggering complexity of the brain and the social interactions they enable. A variety of topics will be discussed: neuroanatomy, development of the brain, sensory and perception, memory, and artificial intelligence. This course includes laboratory experiments including EEGs, action potential recordings, and human-brain interfaces. Fundamentals of Neuroscience will emphasize discussion and projects in which students can explore their personal interests in a variety of neuroscience topics.

Prerequisites: AP Biology

Advanced Topics in Biology (NOT OFFERED in 2025-26)

Duration: Semester (Spring)

Recommended Grade Level: 11-12

Credits: 0.5

Course Level: Post-AP

||

Description: This is a seminar style course where students will explore advanced topics in biology through reading the primary literature as well as creating and carrying out exploratory lab exercises (when applicable). Specific topics to be covered will be determined with student input. Class time will focus on the detailed review of a given paper(s) and class discussions will be led by the students.

Prerequisites: AP Biology ("A-" or higher)

AP Chemistry

Duration: Full-Year

Recommended Grade Level: 10-12

Credits: 1.0

Course Level: AP

||

Description: This course is structured around the six big ideas (BI) in the AP Chemistry Curriculum Framework and is designed for students who have completed one-year of high school chemistry and have a strong foundation in math (the College Board recommends that students have successfully completed two years of algebra, e.g., Algebra 1 and Algebra 2). Overall, this course differs from Honors Chemistry in the breadth and depth of topics covered, textbook, emphasis on mathematical relationships and formulation, nature and variety of

laboratory coursework, pacing, and time required by the students. It is assumed students have a thorough knowledge of the topics covered in the first year course; these topics are reviewed in-depth in a summer homework assignment and briefly in class so that more time can be spent deepening and extending the students' understanding of chemistry.

Prerequisites: Honors Chemistry ("B" or higher) and concurrent enrollment in Advanced Algebra or higher

AP Chemistry Plus

Duration: Full-Year

Recommended Grade Level: 10-12

Credits: 1.0

Course Level: AP

||

Description: The AP Chemistry+ covers all topics in the standard AP Chemistry curriculum but in a deeper and accelerated way. It further extends to the topics of the first-year general chemistry in college which are beyond the AP Chemistry curriculum, such as descriptive chemistry, coordination chemistry, introduction to organic chemistry, etc. Literature-based presentations, laboratory, and projects are also supplemented in the AP Chemistry+.

The course will strengthen the conceptual and computational understanding of AP Chemistry to prepare students for higher level courses in Organic Chemistry and Chemistry/Environmental Research. Students who are placed into this course, via placement test, should be proactive learners with solid background in Honors Chemistry, and have a deep passion for chemistry and scientific investigation.

Prerequisites: Honors Chemistry ("A" or higher) and pass placement test

Organic Chemistry & Biochemistry

Duration: Full-Year

Recommended Grade Level: 11-12

Credits: 1.0

Course Level: Post-AP

||

Description: An introduction to the principles of organic chemistry and biochemistry, including the relationship between structure, properties, and reactivity of organic compounds including amino acids and carbohydrates. Examples of organic chemistry in biology, medicine, and industry will be presented for discussion. Typical laboratory techniques for the synthesis, isolation, purification and identification of organic compounds will be taught. Recommended for students with an interest in studying biology or chemistry in college.

Prerequisites: AP Chemistry ("B+" or higher) or AP Chemistry+

Inorganic & Analytical Chemistry

Duration: Full-Year

Recommended Grade Level: 11-12

Credits: 1.0

Course Level: Post-AP

||

Description: This course is a year-long intensive post-AP elective in PRISMS with two parts of main contents, inorganic chemistry and analytical chemistry. In the first semester, a comprehensive and contemporary introduction of the diverse and fascinating discipline of inorganic chemistry is provided. It covers advanced atomic structure and bonding theory, acid-base chemistry, crystalline solid state, descriptive chemistry of main group elements, coordination chemistry, and organometallic chemistry, as well as the development and

perspective of inorganic research. Examples taken from recent publications and seminar talks presented by students during the semester will be discussed. In the second semester, an introduction to analytical chemistry, including topics such as data handling and analysis, volumetric titrations (acid-base, redox, precipitation, and complex), separation techniques, molecular spectroscopy (including UV-visible spectroscopy, molecular fluorescence, and infrared analysis) as well as sample preparation is covered.

Prerequisites: AP Chemistry (“B+” or higher) or AP Chemistry+

Note: Students without adequate background may not be able to keep up with this course.

AP Environmental Science

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 10-12

Course Level: AP

||

Description: This AP Environmental Science class is intended to meet the same objectives as a first-year college-based course. The method of instruction for this course is unique compared to similar courses because it will be a project-based learning (PBL) approach. Although PBL may take many forms, our approach involves student investigations and simulations that require students to think like scientists, policymakers, farmers, and other adults in real-world settings. The teacher engages students in collaborative problem-solving, argumentation, and deep exploration of the concepts and principles of the discipline. The goal for student learning is understanding the big ideas of energy transfer, interactions between earth systems, interactions between different species and the environment, and sustainability rather than relying on rote memory, to create meaningful learning and knowledge that is actionable, adaptive, and transferable. The course also includes an introduction to the use of “life cycle assessment” (LCA), which measures the environmental impacts of a product or service. LCA is a widely used powerful tool to assess the environmental impact of a product or service through its life cycle from extraction of resources to disposal, reuse, or regeneration.

Prerequisites: Honors Biology (“A–” or higher) and Honors Chemistry (“A–” or higher)

AP Physics

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 10-12

Course Level: AP

||

Description: Students study a mathematically substantial formulation of Newtonian mechanics (first semester) and electricity and magnetism (second semester), including vector and calculus-based treatment of particle kinematics (motion), energy, linear momentum, angular momentum, systems of particles, oscillators, and Newtonian gravity in the first semester. Topics covered in the second semester include electromagnetic fields, superposition, electrostatics, magnetostatics, induction, electric currents and elementary circuits, Maxwell’s equations in integral form and the Lorentz force law. Students are thoroughly prepared to take both the Mechanics and Electricity and Magnetism sections of the Advanced Placement Physics C examination.

Prerequisites: Honors Physics (“B” or higher) and concurrent enrollment in AP Calculus

Note: Completion of AP Calculus is strongly recommended

Modern Physics

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 11-12

Course Level: Post-AP

||

Description: Modern physics will offer coverage for various topics beyond the scope of AP Physics, including Special Relativity, Quantum Mechanics, atomic and nuclear physics, thermodynamics, fluid mechanics, optics, and astrophysics. Modern Physics is the post AP Physics course designed for students who are interested in all the different areas not covered by AP Physics. The goal of the course is to provide students an in-depth (higher than AP level) overview of traditionally common physics topics as well as introduction to 20th century physics such as Special/general relativity and quantum mechanics. The course will involve higher-level mathematics such as partial differential equations, linear algebra, complex numbers, matrix and tensors.

All the above-mentioned topics will have both theoretical and experimental components presented during the course with possibly the sole exception of special/general relativity and nuclear physics. The physics laboratory is equipped with demonstration/research level experimental apparatus for fluid and thermal science, optics and especially quantum mechanics. These higher-level experiments will not only help students with understanding the corresponding topics but also help prepare them for research activities.

Prerequisites: AP Physics (“B” or higher)

Note: Completion or concurrent enrollment in a post-AP math course is strongly recommended

Nanotechnology

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 11-12

Course Level: Post-AP

||

Description: Nanotechnology involves the behavior and control of materials and processes at the atomic and molecular levels. This course is an introduction to the underlying principles and applications of the emerging field of Nanotechnology and Nanoscience. The material covered includes nanofabrication technology at the nanometer length scale, from "bottom-up" to "top-down" technologies. Nanotechnology is designed for students who are interested in modern applications of condensed matter physics after they have taken an AP physics C course.

Prerequisites: AP Physics (“B” or higher)

Note: Completion or concurrent enrollment in a post-AP math course is strongly recommended

Astrophysics and Astronomy (NOT OFFERED IN 2025-26)

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 11-12

Course Level: Post-AP

||

Description: This course provides an overview of applying the laws of physics to distant regions where physical conditions can only be inferred from the emission of electromagnetic radiation. During the course you will learn about the Sun and the Solar System, the stars and the Galaxy, distant galaxies and quasars, and the beginning of the Universe. The goal of this course is to design to give the students who are interested in astronomy and astrophysics a chance to learn how to apply basic physics in situations that are often extreme compared to those found on Earth if they want both a solid grounding in physics and a greater understanding of astronomy.

Prerequisites: AP Physics

Data Science

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 9-12

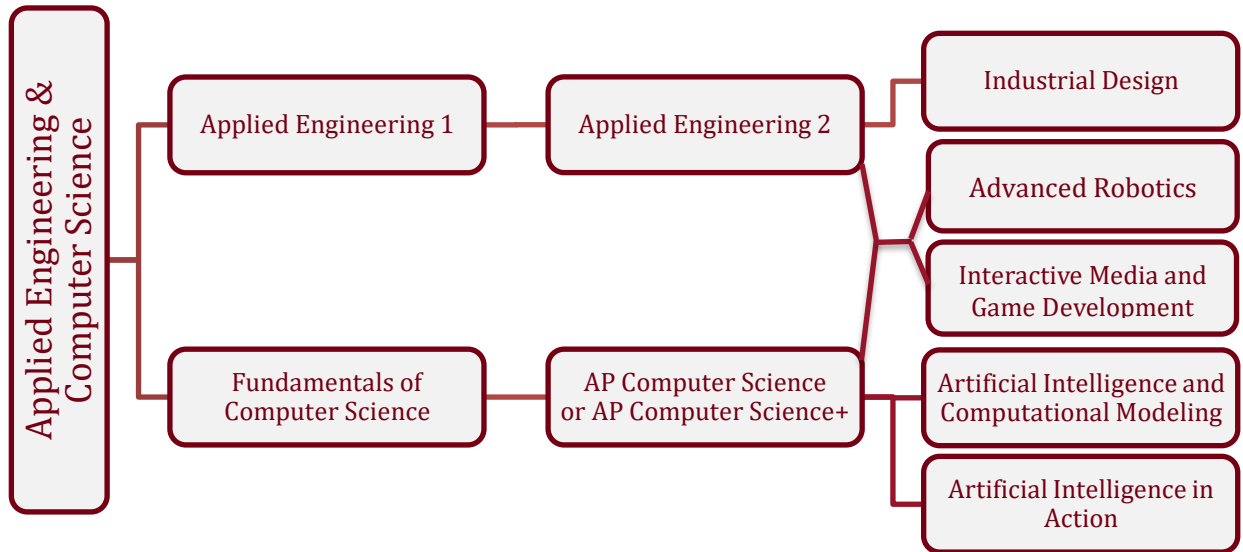
Course Level: Honors

||

Description: Data Science teaches students how to analyze and visualize data using R, covering key topics in data cleaning, statistical analysis, and machine learning. Students will learn to access, organize, and clean messy data from various sources. They will create professional-quality visualizations, interactive plots, and web applications using R Shiny. The course also introduces basic predictive modeling, including applications like salary prediction, spam detection, and fraud detection. Hands-on coding and practical exercises in R are a core part of the learning experience.

Prerequisites: Advanced Algebra (“B” or higher)

Applied Engineering & Computer Science



Core Engineering Courses

Applied Engineering 1

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 9

Course Level: Honors

||

Description: Applied Engineering 1 (AE1) introduces students to the technical application of engineering disciplines through the use of the engineering design process and a highly technical laboratory environment. This course serves as the cornerstone of the PRISMS Engineering program as it engages students in the physical application of complex theoretical topics including basic electronics, engineering design, prototyping, robotics and engineering research. In addition, AE1 is an integral part to the PRISMS BASE program, which bridges a common topic of study between the Arts, Science and Engineering. Within the BASE program, AE1 students will work in teams to research, design, construct and test a sensing device to support a scientific study.

Prerequisites: None

Note: The PRISMS BASE Program is required for all 9th grade students

Applied Engineering 2

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 10

Course Level: Honors

||

Description: Applied Engineering (AE2) continues engineering-based exploration through a series of problem-based labs that focus on 3 core engineering disciplines: Aerospace, Electrical & Mechanical. Throughout the year, students will work in both classroom and laboratory settings to study circuit design, microcontroller programming, data acquisition, prototyping, and robotics. In Addition, students will conduct a cumulative research project to demonstrate

their newfound skills. This project will be based on topics pertaining to one of the engineering disciplines mentioned and will be featured in an exhibition at the end of course.

Prerequisites: Applied Engineering 1

Elective Engineering Courses

Advanced Robotics

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 11-12

Course Level: Post-AP

||

Description: Advanced Robotics is a problem-based course that explores methods in which higher level spatial awareness and control algorithms are applied to complex robotic systems. Within the course, students will learn about closed loop systems, sensing and navigation, multi-method locomotion, kinematic design and analysis, machine vision, wireless control methods and data integrity, industry-standard solid modeling software, 8-bit and 32-bit mobile computing platforms, programming and manufacturing. These concepts will then be applied through the implementation of the Engineering Design Process to the design and construction of multiple robotic systems.

Prerequisites: AP CS and Applied Engineering 2

Industrial Design

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 11-12

Course Level: Post-AP

||

Description: Industrial Design bridges the gap between Computer Aided Design and Prototype Manufacturing. Throughout the course, students will solve technical problems by combining human factors with the Engineering Design Process to produce creative and unique solutions. Students will investigate multiple materials and processes through the use of sketching techniques, industry standard solid modeling software, “blueprint” layout, CNC machining, woodworking, metalworking, plastic forming, screen printing and multi-material 3D printing. The course will conclude with the production of a technical portfolio detailing the Design Process of each design.

Prerequisites: Applied Engineering 2

Core Computer Science Course

Fundamentals of Computer Science

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 9-10

Course Level: Honors

||

Description: Students will learn the fundamentals of computer science, with a large emphasis on hands-on programming experience. Students will practice to improve their logical reasoning and problem-solving skills, algorithmic thinking, and technical communication skills. Programming exercises will be done in Python, although the topics and features covered are chosen to help students build these fundamental skills, and not primarily to learn more of the

Python language. Topics include control structures, common data structures, functions and classes, software engineering best practices, algorithms, and the store-by-reference model for data storage.

Prerequisites: None

Elective Computer Science Courses

AP Computer Science

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 10-12

Course Level: AP

Description: The purpose of this course is to prepare students for the Advanced Placement Computer Science A examination, for which college credit and/or placement may be given, if a qualifying score is achieved. Content of this college-level course corresponds to the syllabus of the College Board Advanced Placement Program for Computer Science A. Students will design software to solve problems iteratively or recursively, and use data structures, such as arrays, lists, stacks, and queues, to represent information within a program. Students will also gain a working knowledge of the major hardware and software components of computer systems. Java is the main vehicle for implementing solutions to problems. All students are required to take the Advanced Placement exam.

Prerequisites: Fundamentals of Computer Science (“B” or higher)

AP Computer Science Plus

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 10-12

Course Level: AP

Description: AP Computer Science Plus (AP CS+) explores algorithms and data structures beyond the traditional AP CS A domain, such as linked lists, stacks, queues, trees. The course will strengthen a foundation of computer science to prepare students for higher level courses in Artificial Intelligence and AI/CS Research. Students who are placed into this course, via placement test, should be proactive learners, have a deep passion for computer science, and are already proficient at programming in Java. Approximately 75% of the course will explore content that is above and beyond the standard AP CS A curriculum.

Prerequisites: Fundamentals of Computer Science (“A”) and pass placement test.

Artificial Intelligence and Computational Modeling

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 11-12

Course Level: Post-AP

Description: Computational Modeling topics include computational tools such as vectorized operations, and mathematical modeling tools such as Monte Carlo simulations, dynamic systems, and agent-based models. Students will implement existing models, create models, run experiments with models, and analyze both the conclusions of the models and what real-life conclusions can, or cannot, be drawn from them. Artificial Intelligence topics include search, game playing, and machine learning.

Prerequisites: AP CS (“B” or higher) and Calculus BC (“B” or higher; completion preferred by concurrent enrollment acceptable)

Note: Students applying in 10th grade require teacher approval

Interactive Media and Game Development

Duration: Full-Year

Recommended Grade Level: 11-12

Credits: 1.0

Course Level: Post-AP

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Description: In this course, students will learn electronic, software, and project management engineering skills, and practice creative design. Students will create several software projects incorporating modern media such as games, virtual reality, and 3D, as well as alternative forms of human-computer interaction such as haptic and voice controllers. Students will work with a variety of software development environments such as Unity, Perlenpeil, and arduino.

Prerequisites: AP CS and Applied Engineering 2

Artificial Intelligence in Action (NOT OFFERED IN 2025-26)

Duration: Full-Year

Recommended Grade Level: 11-12

Credits: 1.0

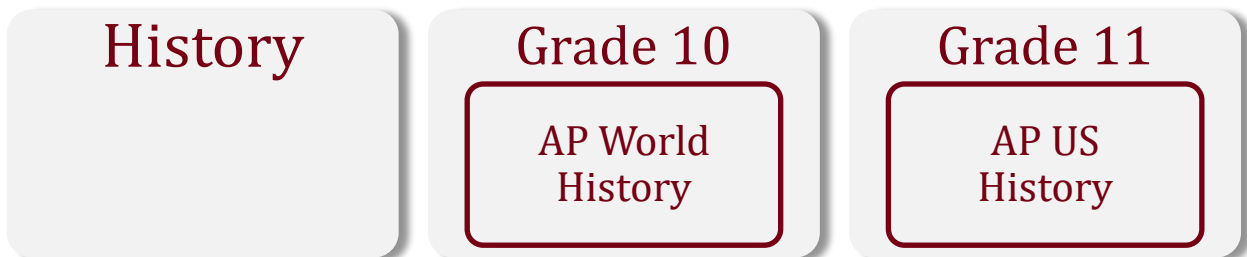
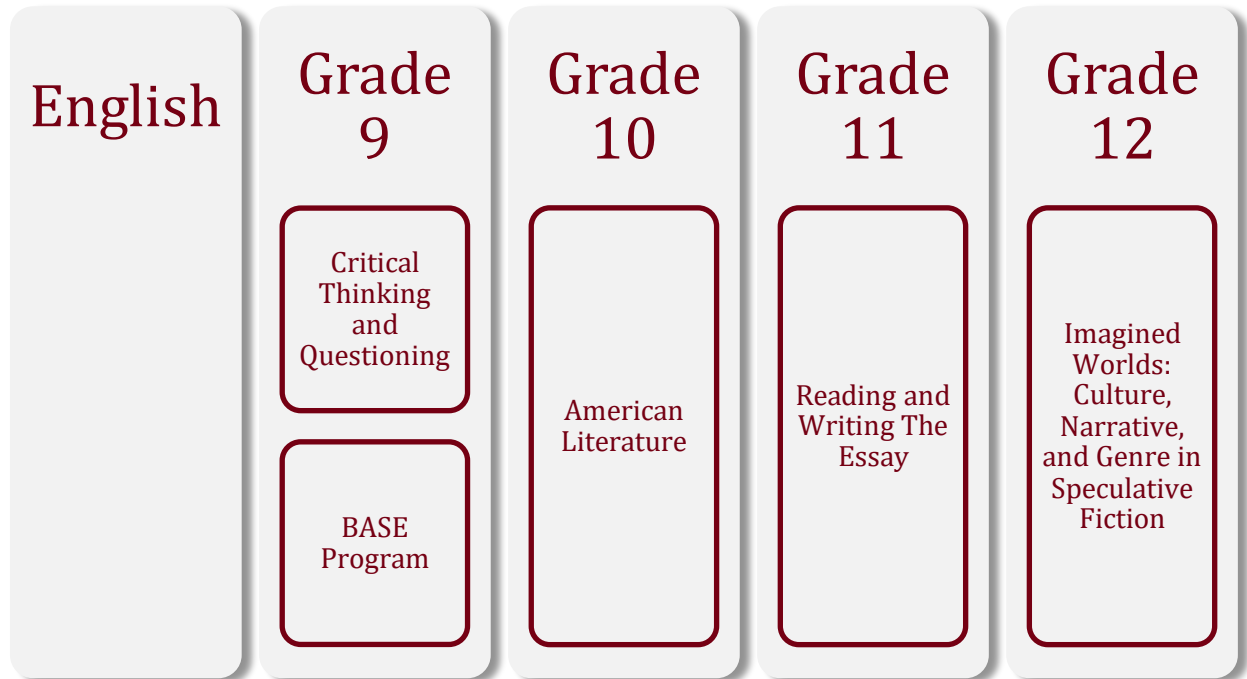
Course Level: Post-AP

||

Description: Currently, Artificial Intelligence (and its subfields) has been used in many places, some applications are advertised, some are not; some applications are well done, some are with problems. This course will go through major applications being worked on by universities and corporations, major worldwide problems that can be candidates for Artificial Intelligence, and lessons learned from examples of misuse and abuse of Artificial Intelligence. In addition, this course will identify some topics suitable for study and research in high schools.

Prerequisites: AP CS or teacher permission

Humanities and World Languages



Core English Courses

English 9

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 9

Course Level: Honors

||

Critical Thinking and Questioning (Fall Semester)

Description: “How do you know what you know?” The first-semester freshmen course focuses on the importance of this essential question and on foundational critical thinking skills for success with the broader academic program at PRISMS. Students will consider both the philosophical and practical dimensions of critical thinking and questioning through close reading, class discussions, and writing evidence-based arguments. The course focuses on improving students’ writing skills at the paragraph level.

From there, students build their ability to write clear and interesting prose for audiences by focusing on register, tone, sentence structures, and word choice, sentence variety, etc. Special attention is given to note-taking and annotating texts as students learn to recognize major themes, develop and maintain a critical tone, consider authorial choices, and make meaningful connections between the works and their contexts.

The BASE Program: Bridging the Arts, Science, and Applied Engineering (Spring Semester)

Description: The BASE Program bridges a common topic of study among the arts, science, and engineering and uses a process-oriented approach to help students establish connections across the disciplines. Student groups learn to collect, analyze, and present quantitative information; conduct background research; cite sources using the CSE system, and prepare publications and presentations through long-term independent scientific research.

Building on what they learned in the first semester, the freshmen turn their attention to reading and writing about science. The BASE Program puts students into small groups and emphasizes the importance of learning to work on a team and collaborate effectively. They develop communication skills through listening to and practicing oral presentations. The course culminates in a research paper and presentation at the spring Research Symposium

Possible titles for study include *The Curious Incident of the Dog in the Night-Time*, *Fahrenheit 451*, *Plato’s Republic*, *The Strange Case of Dr. Jekyll and Mr. Hyde*, various short stories, *Brave New World*, and *Writing Science in Plain English*.

Prerequisites: None

Note: The PRISMS BASE Program is required for all 9th grade students

English 10: American Literature

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 10

Course Level: Honors

||

Description: English 10: American Literature offers an in-depth exploration of canonical American literature, spanning from the Puritan era to the transformative voices of the 1980s. Students will engage with a diverse array of texts, including foundational works by authors such as Ralph Waldo Emerson, Nathaniel Hawthorne, Walt Whitman, Emily Dickinson, F. Scott

Fitzgerald, and Arthur Miller, examining how these literary pieces reflect the evolving American identity and cultural landscape.

Central to this seminar-style course is the development of critical reading and thinking skills. Students will analyze themes, styles, and historical contexts, fostering a deeper understanding of how literature serves as a mirror to society. Through guided discussions, students will enhance their ability to articulate complex ideas, engage in thoughtful debate, and consider multiple perspectives.

Writing is a vital component of the course, as students will cultivate their skills through various assignments, including analytical essays, creative responses, and reflective journaling. Emphasis will be placed on crafting clear, coherent arguments supported by textual evidence, encouraging students to find their unique voice in academic writing.

By the end of the course, students will not only gain insight into significant literary movements and figures but also develop a robust toolkit for critical engagement with texts, preparing them for their continued studies in literature and the humanities.

Prerequisites: English 9

English 11: Reading and Writing The Essay

Duration: Full-Year

Recommended Grade Level: 11

Credits: 1.0

Course Level: Honors

||

Description: This course is dedicated to the study of expository and personal essays—a writing form introduced by the 16th century humanist, Michel de Montaigne. Since his time, the essay has flourished as the genre has allowed writers of every generation to consider deeply the observable world. The essay, in fact, takes on so many forms that the delight in its study lay in its seemingly endless array of structures and subjects. Nothing, it seems, is off-limits for essay writers. The course will invite the students to read from a variety of well-known essayists on a panoply of topics, analyzing their work through the lenses of audience, purpose, genre, and author.

The students will use the essays in *The Norton Reader Shorter Sixteenth Edition* as models when they construct their own personal works, exploring how they live in the world, how they relate to others, and how they make meaning of their experiences. The course emphasizes a recursive writing process that focuses on the skills of pre-writing (ideation), drafting, peer editing, and reflection. Using the same close-reading and annotating skills developed grades 9 and 10, the students learn to recognize the techniques of professional writers and adapt them for their own use, discovering different structures and tactics to share their experiences and ideas in ways that are surprising and convincing.

Prerequisites: English 10

English 12: Imagined Worlds: Culture, Narrative, and Genre in Speculative Fiction

Duration: Full-Year

Recommended Grade Level: 12

Credits: 1.0

Course Level: Honors

||

Description: In their final year in the PRISMS English program, students will navigate the bayous and byways of speculative fiction in literature, film, and television from the early 19th century through to the modern day. By analyzing the central tropes and archetypes found in genres such as science fiction and fantasy, students will learn how to situate and understand speculative fiction texts in their own historical and cultural contexts and better understand how narrative storytelling works on a structural level. To prepare for college-level English courses, students will practice the seminar format—leading and participating in extended conversations about enduring themes of the human condition—and produce regular critical essays. A capstone project will require students to create an imaginative piece of narrative storytelling.

Prerequisites: English 11

Core History Courses

AP World History

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 10

Course Level: AP

Description: AP World History: Modern is a rigorous, college-level course that explores key developments and global interactions from approximately 1200 CE to the present. Through the study of civilizations, cultures, empires, and societies across Africa, the Americas, Asia, and Europe, students will analyze historical events, cultural trends, artistic/intellectual movements, economic systems, and political structures that have shaped the modern world.

The course emphasizes historical thinking skills, including comparison, causation, continuity and change over time, and the evaluation of primary and secondary sources. Students will engage with historical texts, maps, and visual sources while developing strong analytical writing skills through document-based and long-essay questions.

Major topics include the expansion of global trade networks, revolutions and nation-building, industrialization, imperialism, world conflicts, decolonization, and globalization. The course prepares students for the AP World History: Modern exam and fosters a deep understanding of historical patterns and connections that continue to influence the present day.

Prerequisites: None

AP United States History

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 11

Course Level: AP

Description: “AP U.S. History is designed to be the equivalent of a two-semester introductory college or university U.S. history course. In AP U.S. History students investigate significant events, individuals, developments, and processes in nine historical periods from approximately 1491 to the present. Students develop and use the same skills, practices, and methods employed by historians: analyzing primary and secondary sources; developing historical arguments; making historical comparisons; and utilizing reasoning about contextualization, causation, and continuity and change over time. The course also provides seven themes that students explore throughout the course in order to make connections among historical developments in different times and places: American and national identity; migration and settlement; politics and power; work, exchange, and technology; America in the world; geography and the environment; and

culture and society.” (From The College Board) The course prepares students for the AP United States History Examination.

Prerequisites: None

Humanities Elective Courses

AP United States Government and Politics

Duration: Semester (Fall)

Recommended Grade Level: 10-12

Credits: 0.5

Course Level: AP

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Description: “AP United States Government and Politics introduces students to key political ideas, institutions, policies, interactions, roles, and behaviors that characterize the political culture of the United States. The course examines politically significant concepts and themes, through which students learn to apply disciplinary reasoning assess causes and consequences of political events, and interpret data to develop evidence-based arguments.” (From The College Board) The course prepares students for the AP United States Government and Politics examination.

Prerequisites: None

AP Comparative Government and Politics

Duration: Semester (Spring)

Recommended Grade Level: 10-12

Credits: 0.5

Course Level: AP

||
Description: “The AP course in Comparative Government and Politics introduces students to fundamental concepts used by political scientists to study the processes and outcomes of politics in a variety of country settings. The course aims to illustrate the rich diversity of political life, to show available institutional alternatives, to explain differences in processes and policy outcomes, and to communicate to students the importance of global political and economic changes. Comparison assists both in identifying problems and in analyzing policymaking. Six countries form the core of the AP Comparative Government and Politics course: China, Great Britain, Iran, Mexico, Nigeria, and Russia.” (From The College Board) The course prepares students for the AP Comparative Government and Politics examination.

Prerequisites: None

Creative Writing

Duration: Full-Year

Recommended Grade Level: 9-12

Credits: 1.0

Course Level: Honors

||
Description: Creative writing introduces students to some of the processes and techniques of writing poetry, fiction, and creative nonfiction. Close readings of classic and contemporary texts will expose students to various writing styles and schools of creative expression. Class time is devoted to composing and workshopping original work and discussing assigned pieces of literature. During the fall semester, the course will focus on poetry; during the spring semester, the focus shifts to fiction and creative nonfiction. Students are not required to take both semesters.

Prerequisites: None

Introduction to Chinese Civilization (NOT OFFERED in 2025-26)

Duration: Full-Year

Recommended Grade Level: 9-12

Credits: 1.0

Course Level: Honors

||

Description: This two-semester course is designed for students who are interested in learning about China, one of the world's most complex and influential civilizations. The course offers a general introduction to Chinese civilization from ancient times to the present through exploring Chinese history, philosophy, culture, literature, and the arts. Students will learn about the major events that shaped Chinese history, its main philosophical traditions, social and cultural customs, and literary and artistic works. All of these established the foundations of Chinese civilization and its many dimensions. Readings include a wide range of historical, philosophical, cultural, literary, and artistic texts in English.

Prerequisites: None

World Languages

Note: Languages at PRISMS are taught at three levels: first-year, second-year, and advanced, wherein students beyond the second-year are grouped in one class. Regarding Advanced Placement instruction: teachers prepare students interested in taking the AP examination by integrating their AP preparation into the classwork of the advanced level courses. International students are exempt from the language requirement. Domestic students are required to take three years of a language as a requirement for graduation.

Mandarin 1

Duration: Full-Year

Recommended Grade Level: 9-12

Credits: 1.0

Course Level: Honors

||

Description: Mandarin 1 is an introductory course designed for high school students with little or no prior experience of the Chinese language. This beginner course provides students with basic listening, speaking, reading and writing skills in Mandarin Chinese. Various cultural aspects will be integrated into the classroom to expand student understanding of Chinese culture, history, food, and arts, and encourage interest in absorbing this language. Students will learn the fundamental elements of Chinese, including the phonetic system of Pinyin, the writing system of characters, as well as primary vocabulary and grammatical structures. At the end of the course, students will acquire some entry-level communication skills and appreciate the culture through daily conversations, games, plays, songs, and other activities in real-life situations.

Prerequisites: None

Mandarin 2

Duration: Full-Year

Recommended Grade Level: 10-12

Credits: 1.0

Course Level: Honors

||

Description: Mandarin 2 is a course designed for students who have taken Mandarin 1 or are at an equivalent level. This course continues to develop and expand students' grasp of Mandarin

Chinese through advancing and integrating their skills of listening, speaking, reading, and writing at a higher level. Students will learn more complex grammar, vocabulary, and sentence structures to enhance their understanding, learning, and practicing of the language. At the end of the course, students will be able to communicate well about themselves, families and friends, daily life, and such matters as transportation, school life, and weather. They will also explore Chinese civilization, customs, modernization, and traditional as well as contemporary art forms, to enrich their immersion in the language and culture.

Prerequisites: Mandarin 1 or sufficient score on placement test

Advanced Mandarin

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 10-12

Course Levels: Honors, AP

Description: Advanced Mandarin is designed for students who successfully completed the Mandarin 1 and 2 courses or have at least two years' learning experience. As an intermediate course, students will continue to develop listening, speaking, reading and writing skills for the Chinese language. They will also learn more complex grammatical structures and sentence patterns to communicate on familiar topics through interaction and description. Students will also participate in conversations, sing Chinese songs, create art projects, write dialogues, and create and perform skits in Mandarin Chinese. Students will also gain knowledge about Chinese culture and acquire a cross-cultural awareness and international perspective. Students who are confident in their ability to perform well on the Advanced Placement Chinese examination are encouraged to do so.

Prerequisites: Mandarin 2 or sufficient score on placement test

Spanish 1

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 9-12

Course Level: Honors

Description: Spanish 1 is a beginner course that provides a foundational understanding of grammar and vocabulary. Students learn all the basics such as pronouns, including direct and indirect object pronouns, and distinguish between *ser* vs. *estar* and *tener* que vs. *deber*. They master present simple, present progressive, and preterite verb conjugations. Vocabulary covers the alphabet, numbers, days, months, class schedules, clothing, food, relationships, household objects, and chores. Through interactive tasks and cultural insights, students develop spoken and written proficiency. Upon completion, they confidently engage in basic Spanish conversations and real-life scenarios.

Prerequisites: None

Spanish 2

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 10-12

Course Level: Honors

Description: Spanish 2 builds upon foundational language skills, consolidating Spanish grammar essentials. Students review present and preterite tenses and delve into new concepts such as *gustar* and similar verbs, reflexive verbs, demonstrative adjectives, commands,

imperfect, imperfect progressive, subjunctive, present perfect, future, and conditional tense. Vocabulary expansion encompasses objects in a classroom, food, city landmarks, leisure activities, household chores, clothing, animals, home, family, and occupations. Through diverse activities like paired speaking practice, skits, projects, and cultural readings, students deepen their language proficiency. This course offers a holistic understanding of Spanish grammar and culture, empowering students to engage confidently in real-life scenarios within the Spanish-speaking world.

Prerequisites: Spanish 1 or sufficient score on placement test

Advanced Spanish

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 10-12

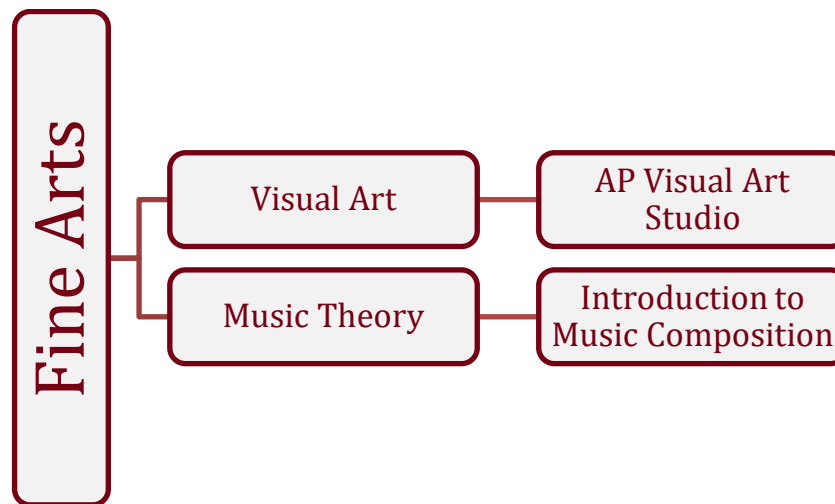
Course Levels: Honors, AP

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Description: Advanced Spanish is tailored for upper-level learners, dedicated to refining and consolidating previously acquired language skills. Emphasizing listening, speaking, reading, and writing, this course delves deeply into grammatical complexities. A comprehensive review of Spanish 1 and 2 grammar is supplemented with in-depth exploration of imperfect vs preterite tense, present perfect, past perfect, passive voice, conditional, and future tense. The subjunctive, including present perfect subjunctive, receives extensive attention. Vocabulary enrichment spans diverse topics, catering to advanced contexts such as daily routines, clothing, food markets, health, family dynamics, and technology. Through this comprehensive approach, students hone their linguistic abilities, navigating nuanced linguistic and cultural landscapes with confidence. Students who are confident in their ability to perform well on the Advanced Placement Spanish examination are encouraged to do so.

Prerequisites: Spanish 2 or sufficient score on placement test

Fine Arts



Art Elective Courses

Visual Art

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 9-12

Course Level: Honors

||

Basic (Fall Semester)

Description: While the PRISMS Art Classes are strongly rooted in basic techniques and fundamentals, they also include innovative elements, such as a rotating schedule of visiting artists from a variety of artistic backgrounds, as well as studio, gallery or museum visits to New York City. The classroom is intended to be a laboratory of creative inspiration. Our teaching philosophy encompasses traditional (although the term traditional is hard to define in these days of global art aesthetics and practice), non-traditional, and unconventional approaches to art, including conceptual, performance, figurative (objective) and abstract (non-objective). Our teaching methodology encompasses a broad structure with varying approaches, which will be based on the needs of a particular student or group of students.

Advanced (Spring Semester)

Description: The advanced course will build on the knowledge and skills students learn at the basic level, while also focusing on enhancing the project-based learning that students will gain through other aspects of their overall PRISMS education. Each student will conceive of, research, propose and execute a major project, to be displayed in a school-wide exhibition at the end of the year. He or she will choose and execute the subject, medium, style, and other aspects of the project, under the guidance of the instructor. Course objectives include: Further develop knowledge and skills gained from the Basic Visual Arts course; Develop the ability to express via digital imagery knowledge of an important idea or theme by creating a short video for school-wide presentation; Further develop teamwork and collaboration skills by participating in a group project; Further develop analytic thinking and the creative process through researching the life and work of a professional artist; Further develop research, analytic, art history and studio skills by conceiving of, researching, and creating an independent project on a subject that reflects PRISMS' core curriculum.

Prerequisites: None

AP Visual Arts Studio

Duration: Full-Year

Credits: 1.0

Recommended Grade Level: 10-12

Course Level: AP

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Description: The AP Visual Arts Studio course will be a year-long class offered to students who are seriously interested in the practical application of art. Students will work with diverse media, styles, subjects, and content. Students will be evaluated on the year-long portfolio, submitted at the end of the year. The course consists of three possible portfolios: Two-Dimensional Design, Three-Dimensional Design, or Drawing, corresponding to the most common college foundation courses. Students' work will be informed and guided by observation, research, experimentation, discussion, critical analysis, and reflection, relating individual practices to the art world. Students will be asked to document their artistic ideas and practices to demonstrate conceptual and technical development over time. AP Studio Visual Art will support students in becoming inventive artistic scholars who contribute to visual culture through art making.

Prerequisites: Visual Art

Music Elective Courses

Music Theory

Duration: Semester (Fall)

Credits: 0.5

Recommended Grade Level: 9-12

Course Level: Honors

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Description: Music is a living language, and in this class we will cover the basics of musical notation and literacy. Topics covered will include pitch, rhythm, scales, modes, time signatures, intervals, chords, harmony, and tonality. Our approach will be both practical and theoretical; we will first learn conceptual topics, and then put them into practice through basic performance and composition. For example our study of scales and chord progressions will be reinforced by practice at the keyboard. Additionally, we will integrate a variety of topics by composing short phrases, melodies, and songs. Our goal is to become more literate and sensitive musicians.

Prerequisites: Evaluation by Instructor

Introduction to Musical Composition

Duration: Semester (Spring)

Credits: 0.5

Recommended Grade Level: 9-12

Course Level: Honors

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Description: Everyone has the potential to be musically creative, and this class is designed to help students discover and nurture their own musical creativity. In this class, we will engage in a variety of diverse musical activities and games that cultivate our ability to improvise. Together we will also explore more formal methods for creating original music. Students will also learn music software that will enable the creation of musical scores. Ultimately, students will be required to write a series of short musical compositions that will be shared in class electronically or through live performance. In order to enroll in the class, students must demonstrate a basic level of musical literacy and proficiency, as determined by the instructor.

Prerequisites: Evaluation by Instructor

Physical Exercise Requirement

In line with our belief that a healthy body promotes a healthy mind, all boarding students are required to take part in our after school Physical Activity Program from 4:15 – 5:00 each afternoon (Monday - Friday). Day students are also required to participate if they remain on-site after the end of the academic day. After school activities include: P.E., basketball, soccer, running, cycling, tennis and table tennis, frisbee, etc.

Additional Academic Programs

Courses at Princeton University

Exceptionally talented students who have exhausted all post-AP elective options in a subject may be eligible to take courses at Princeton University through their High School Program (HSP). Princeton University provides this opportunity as a courtesy to PRISMS students who demonstrate consistently superior performance in all aspects of their academic work and show a sincere interest in pursuing study at truly advanced levels beyond those offered at PRISMS.

The High School Program (HSP) at Princeton University was created over two decades ago to address the needs of high school students who have earned the highest possible grades for their academic work and have exhausted all high school courses in eligible subjects that they would like to continue studying at the college level. The HSP is intended to serve as an extension of the existing high school curriculum and is NOT intended as an opportunity to start a new line of study or to replace an existing high school course with a course at the University.

Students who meet the qualifications for admission to the Program may enroll in courses in mathematics, physics, chemistry, biology, geosciences, world languages, computer science, and/or music (course offerings are subject to change from year to year). Students who believe they may be eligible should contact the School Counselor at the beginning of the school year for more information.