

**Heritage High School
Advanced Placement Handbook
2021-2022**



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Advanced Placement Courses at Heritage High School

General Information about Advanced Placement Courses

The Advanced Placement program is sponsored by the College Board, a non-profit organization dedicated to preparing, inspiring and connecting students to college. The College Board writes and administers advanced tests and studies in almost 40 subjects from Art to Statistics. These tests, representative of freshman level college knowledge on that subject, form the basis of what we study in Advanced Placement courses. Currently, Heritage offers several Advanced Placement courses with the intent of challenging our students and to better prepare them for college. Each May, students take a national test that measures their knowledge in the areas they study during the year. If the student's score is high enough, they may receive college credit at over 3000 institutions nationwide. While the amount and type of credit you receive depends upon the college you attend, many will allow you to skip basic courses, if you earn scores of 3, 4, or 5 on the AP exam.

Philosophy of AP at Heritage High School

The philosophy of Advanced Placement at Heritage is open access to any student who wants to take an AP course. Part of the fulfillment and the culmination of that course is the Advanced Placement exam. It is required that all students in an AP course take the AP exam in May. Students in AP courses are held to a high level of academic expectations. If a student is found to plagiarize or cheat in an AP course, they will be dropped from the class. Because AP courses are at the college level, appropriate student behavior and maturity are required. If a teacher observes that a student's maturity level or class behavior is not appropriate, they may request for that student to be removed from the class.

Why take an AP course?

One advantage of taking an AP course is that it allows the student to experience the rigors of a college level course in the more supportive high school environment. It allows students to remain in the high school setting rather than commuting to a college campus. AP courses can ensure that your senior year is a productive one instead of taking courses that are lacking in challenge (which is important to college admissions offices). Credits achieved through the AP program will also be less expensive than typical college tuition. It also provides students with an opportunity to build advanced study skills necessary for success at the college level. Any student who is planning on attending a four year university could consider taking at least one AP course in high school for the benefits of preparation.

What is an appropriate course load?

Course load should be determined on an individual basis as students have unique ability levels, outside commitments, and motivation to stick with a challenging course for a full year. Consulting with parents, teachers and counselors can provide the most insight. Having a student be successful in one or two AP classes is better than floundering in too many sections..

Some things to consider are (see the Advanced Placement Reality Check at the back of this handbook or on the back side of the AP Agreement):

- Previous experience in honors or AP courses
- Motivation of the student
- Co-curricular activities
- GPA (generally 3.0 or higher)
- Non-AP schedule of classes
- Volunteer commitments
- Work

Advanced students will have the opportunity to take AP courses in any year of school. The typical course load for juniors and seniors is one or two courses with three being considered very challenging. A course load of four or more AP classes should only be considered for students who are uniquely ready for a fuller load of college-level courses while in high school.

How are AP grades weighted?

AP semester grades are weighted to reflect the increased levels of rigor, work load, and expectations as compared to traditional high school classes. This means that the value of the letter grade on a student's transcript is increased by 1.0 in calculating the student's GPA. The exception is for a D or F earned for the course. GPA's are calculated at the end of each semester.

Weighted Grade Scale:

A=5.0

B=4.0

C=3.0

D=1.0

F=0.0

Students will only receive the weighted GPA if they take the AP exam in May. If a student does not take the exam or if they drop the course at semester, they will not receive the weighted AP grade.

When are the AP exams?

Student's mastery of course content is tested each May through the College Board Testing Program. Most tests consist of multiple choice questions and various free response essays. A few courses (ie AP Seminar and AP Research) do not have final tests but rather submission of final projects that are graded. Results are released the following July and are mailed to each student. They are scored on a scale of 1-5, with scores of 3 and higher considered passing in most institutions. The exam cost is determined by the College Board and administrative costs at Heritage High School. A \$40 deposit for each exam will be added to the student's school fees during the first semester. Assistance for exam fees can be provided if a student qualifies based on family financial income and need.

AP exams are administered the first two full weeks of May. Parents should be aware this can be a difficult time in managing preparation and taking exams. Students may find that commitments outside of school compete with their need to prepare for the exams. We suggest that parents and students work together to manage the increased time to be successful on these tests.

Advanced Placement Capstone

AP Capstone

AP Capstone is an innovative diploma program from College Board that equips students with the independent research, collaborative teamwork, and communication skills that are increasingly valued by colleges. AP Capstone is built on the foundation of 2 AP courses – AP Seminar and AP Research – and is designed to complement and enhance the in-depth, discipline-specific study experienced in other AP courses. It cultivates curious, independent, and collaborative scholars and prepares them to make logical and evidence-based decisions.

In AP Seminar, students investigate real-world issues from multiple perspectives, gathering and analyzing information from various sources in order to develop credible and valid evidence based arguments.

In AP Research, taken after AP Seminar, students cultivate the skills and discipline necessary to conduct independent research in a field of their choice, in order to produce and defend a scholarly academic thesis.

Students who earn scores of 3 or higher in AP Seminar and AP Research and on four additional AP Exams of their choosing will receive the **AP Capstone Diploma**. Students who earn scores of 3 or higher in AP Seminar and AP Research, without the additional scores on four additional AP Exams, will receive the **AP Seminar and Research Certificate**. Both signify their attainment of college-level academic and research skills. *AP Seminar may also be taken as a stand-alone option but the student will not be eligible to earn a Capstone Diploma or Certificate.*

Please note that the cost for both the AP Seminar and AP Research exams are \$143 each.

AP Seminar/Honors English 10

Course Description

In this foundational course, students develop and strengthen analytic and inquiry skills by investigating real world topics of their own choosing from multiple perspectives which often are different or competing. In groups and individually, the students will examine many types of materials to collect and analyze information with accuracy and precision, craft arguments based on facts supporting their point of view, and effectively communicate this information through various media. Themes that allow for deep exploration based on students interests, local and/or civic issues, global or international topics, and concepts from other AP courses are typically selected. For example, students might explore the question of whether national security is more important than a citizen's right to privacy, or whether genetic engineering is a benefit to society. During the course, students complete a team project and presentation, an individual paper and presentation, and take a written AP exam in May. The AP Seminar exam score is based on all three components and is reported on the standard 1-5 AP scoring scale. Most work is completed in class.

Course Expectations

Contact the instructor for further information.

Prerequisites

Grade 10 Teacher recommendation/approval

Required Materials

Contact instructor for further information.

Summer Work

Check AP page on Heritage website for further information.

AP Research

Course Description

The second course in the AP Capstone experience allows students work with an expert advisor to design, plan, and conduct a year-long research-based investigation on a topic of individual interest. Through this inquiry and investigation, students demonstrate the ability to apply scholarly understanding to real-world problems and issues. Students further the skills developed in AP Seminar by understanding research methodology, employing ethical research practices, and accessing, analyzing, and synthesizing information to build, present, and defend an argument. Students may choose to

*dig deeper into a topic students in an AP course;

*work across academic areas with an interdisciplinary topic; or

*study an area of interest, perhaps one for further study at the college level.

At the end of the research investigation, students submit an academic thesis paper of about 5,000 words, present their thesis, and orally defend their work. The AP Research exam score is based solely on the paper, presentation, and defense, and is reported on the standard 1-5 AP scoring scale. Students do not sit for an AP test in May. Most work is completed in the classroom.

Course Expectations

Contact the instructor for further information.

Prerequisites

AP Seminar is required.

Required Materials

Contact instructor for further information

Summer Work

Check AP page on Heritage website for further information.

Advanced Placement Fine Arts Courses

Advanced Placement Music Theory

Course Description

AP Music Theory is a college level course which studies the Common Practice Period including aspects of melody, harmony, texture, rhythm, form, musical analysis, composition, history, and style. This course will also cover musicianship skills such as diction, recognition/identification, sight-singing, and other listening skills.

The student's ability to read and write musical notation is fundamental to this course. Students must be able to read at least one clef (Treble, Alto, Tenor, or Bass Clef). It is also assumed that the student has acquired (or is acquiring) at least basic performance skills in voice or on an instrument.

The ultimate goal of this course is to develop each student's ability to recognize, understand, describe, and manipulate the basic materials and processes of music in the style of the Common Practice period.

Course Expectations

Contact the instructor for further details.

Prerequisites

Students must know how to read music in at least one clef (Treble, Alto, Tenor, or Bass Clef).

Required Materials

- Text: Tonal Harmony, Stefan Kostka and Dorothy Payne, ISBN 978-007-340135-5
- Workbook for Tonal Harmony: With an Introduction to Twentieth Century Music, Sixth Edition, Stefan Kostka and Dorothy Payne, ISBN 978-007-726996-8
- Material: Straightedge, manuscript paper, large/effective eraser, a plethora of pencils

Summer Work

Contact the instructor for further details.

Additional Teacher Comments

This is a yearlong course requiring the completion of the AP Music Theory Exam in the spring. This is a new course to Heritage High School. Please see the instructor for further information about the Course Expectations, Textbook, and Summer Work.

Advanced Placement Practical Arts Courses

Advanced Placement Computer Science Principles

Course Description

Have you ever wondered how the internet was invented or how it works or why there are jpgs, gifs and pngs and the differences are between them? All of the technology that surrounds us today has been built upon a few very simple principles that when combined and recombined can carry tremendous power and risk. Throughout this course you will be amazed by the technology around you as you gain insight into how and why it works. Computing innovation is far from over, and in the class you will get to try your hand at creating your own artifacts all from the very foundational principles that have made it all possible. The course begins with an examination of how the fundamental unit of digital data - the bit - is actually physically transported over vast distances. From that foundation as the course progresses students learn how to program and build their own applications that demonstrate the ideas and science behind the world of technological innovation.

Prerequisites:

Grades 9-12

Algebra I; recommended B or better

Advanced Placement Computer Science A

Course Description

AP Computer Science is both a college-prep course for potential computer science majors and a foundation course for students planning to study in other technical fields such as engineering, physics, chemistry, and geology. The course emphasizes programming methodology, procedural abstraction, and in-depth study of algorithms, data structures, and data abstractions, as well as a detailed examination of a large case study program. This class is equivalent to the first semester of a college computer science class. Students completing this course are required to take the Computer Science A Advanced Placement examination in May.

Prerequisites

Completion of Algebra II

Required/Suggested Materials Needed

We will be using Java Concepts: Early Objects, 7th Edition by Cay Hortsman. The ISBN for the book is: 978-1-118-43112-2. The book is not required but is a good resource.

Advanced Placement Language Arts Courses

AP Seminar/Honors English 10

Course Description

In this foundational course, students develop and strengthen analytic and inquiry skills by investigating real world topics of their own choosing from multiple perspectives which often are different or competing. In groups and individually, the students will examine many types of materials to collect and analyze information with accuracy and precision, craft arguments based on facts supporting their point of view, and effectively communicate this information through various media. Themes that allow for deep exploration based on students interests, local and/or civic issues, global or international topics, and concepts from other AP courses are typically selected. For example, students might explore the question of whether national security is more important than a citizen's right to privacy, or whether genetic engineering is a benefit to society. During the course, students complete a team project and presentation, an individual paper and presentation, and take a written AP exam in May. The AP Seminar exam score is based on all three components and is reported on the standard 1-5 AP scoring scale. Most work is completed in class.

Course Expectations

Contact the instructor for further information.

Prerequisites

Grade 9 Teacher recommendation/approval

Required Materials

Contact instructor for further information.

Summer Work

Check AP page on Heritage website for further information.

Advanced Placement English Language and Composition

Course Description

This college level course engages students in becoming skilled readers of prose written in a variety of periods, disciplines, and rhetorical contexts and in becoming skilled writers who compose for a variety of purposes. Both their writing and their reading should make students aware of the interactions among a writer's purposes, audience expectations, and subjects as well as the way generic conventions and the resources of language contribute to effectiveness in writing. This course emphasizes the expository, analytical, and argumentative writing that forms the basis of academic and professional communication

as well as the personal and reflective writing that fosters the development of writing facility in any context. This course recognizes that skill in writing proceeds from students' awareness of their own composing process: the way they explore ideas, reconsider strategies, and revise their work. As well as engaging in varied writing tasks, students read a wide variety of prose styles from many disciplines and historical periods to gain understanding of the connections between interpretive skill in reading and writing.

Course Expectations

- Analyze and interpret samples of good writing, identifying and explaining an author's use of rhetorical strategies and techniques;
- Apply effective strategies and techniques in their own writing;
- Create and sustain arguments based on reading, research, and/or personal experience;
- Demonstrate understanding and mastery of standard written English as well as stylistic maturity in their own writings;
- Write in a variety of genres and contexts, both formal and informal, employing appropriate conventions;
- Produce expository and argumentative compositions that introduce a complex central idea and develop it with appropriate, specific evidence, cogent explanations, and clear transitions; and
- Move effectively through the stages of the writing process, with careful attention to inquiry and research, drafting, revising, editing, and review.

Prerequisites

Teacher recommendation, reading test scores, and English grades

Required Materials

- TBD
- As a college course, AP students are expected to purchase their books.

Summer Work

Students are expected to read two full-length books from a list of titles and note the rhetorical strategies used by the author. Students are expected to annotate thoughtfully and thoroughly. A comparative analysis will follow once the school year begins.

Additional Teacher Comments

This is a unique course to the Language Arts Department because it focuses on non-fiction writings. Students should be prepared for the challenge.

"Words - so innocent and powerless as they are, as standing in a dictionary, how potent for good and evil they become in the hands of one who knows how to combine them."

~Nathaniel Hawthorne

Advanced Placement English Literature and Composition

Course Description

This college level course engages students in the careful reading and critical analysis of fiction. This course includes the in-depth reading of texts drawn from multiple genres, periods, and cultures. Writing and critical analysis are also integral parts of this course, but, unlike AP Lang, is focused primarily on literature. As they read, students will...

...deepen their understanding of the ways writers use language to provide both meaning and pleasure for their readers;

...continue to develop their voice as writers, while organizing ideas into clear, coherent, and persuasive arguments about literature;

...show the ability to identify literary devices such as plot structure, characterization, setting, and point of view, and explain how an author's use of these devices relates to the meaning of the work as a whole;

...continue to learn how to identify stylistic elements such as tone, diction, syntax, and form, and explain how an author's use of these elements enhances and contributes to meaning;

...be able to discuss the impact of social and historical contexts and how they help shape meaning.

...develop critical standards for appreciating and approaching literature;

...be able to collaborate with classmates and develop leadership skills in small group projects;

...use all skills necessary to complete an independent study of one book of their choice.

Course Expectations

Read difficult texts for meaning, and formulate ideas about the reading. Express those ideas in clear, cogent writing. Have the ability to prove both orally and in writing their interpretation of texts. Participate daily in classroom discussions with thoughtful, well-founded contributions.

Prerequisites

AP English Language & Composition, or instructor recommendation for rigor of course.

Required/suggested materials needed

All students will be issued Perrine's *Literature: Structure, Sound & Sense 12th^h AP Edition*, which is our class textbook. Additionally, all students will be expected to purchase 5-6 other books on their own—whether used for their independent study, their summer reading assignment, or in class. Titles can change from year to year, but each student will be notified of which book he or she needs with ample time to procure it.

Summer Work

Students are expected to read and thoroughly annotate at least two works during the summer before class begins.

Additional teacher comments

As a college level course, the ability to just "read" a book or poem is of little value. Instead, students will be routinely expected to allude to other works of literature, to have historical understanding of particular settings, to apply fictional or historical situations and issues and ideas to their own lives, and to do much more besides.

Advanced Placement Mathematics Courses

Advanced Placement Calculus AB

Course Description

Advanced Placement Calculus AB is a full year course designed to prepare students to take the AP Calculus AB exam in the spring. In this calculus course, students focus in-depth on concepts as well as skills to help prepare them for whatever mathematical challenges they may face in the future. The goal is for students to learn how to apply calculus concepts to solve problems in a multitude of situations and to use calculus to describe mathematical relationships.

Course Expectations

Students should expect to have at least one hour of homework daily. Students who choose not to complete homework or other assignments will not be successful in this class. Grades are based on a combination of daily work, quizzes, tests, projects and AP papers. Students must know how to use a graphing calculator. Students enrolled in this class must take the AP Calculus AB exam in May.

Prerequisites

Students entering this course are required to have successfully completed a rigorous, one-semester course called Trigonometry or Honors Trigonometry, and also a one-semester course called Pre-Calculus or Honors Pre-Calculus. Students must also be approved by the instructor.

Required Materials

Students will need a notebook reserved only for this class and a graphing calculator to complete some assignments. A TI-83 or TI-84 is required. Students should be aware that certain calculators cannot be used on course tests or on the AP Calculus AB exam.

Summer Work

There will be a short review assignment to refresh your brain before starting school.

Additional Teacher Comments

Advanced Placement Calculus AB is a rigorous college level advanced math course. Students are at a distinct advantage if they can take this class before they enter college.

Advanced Placement Calculus BC

Course Description

This challenging and demanding course consists of a full high school academic year of work that is comparable to calculus courses in colleges and universities. The Calculus BC curriculum is defined by the College Board and includes all topics covered by Calculus AB plus several additional topics. Students enrolled are committing to a full-year course and will be required to take the AP Exam in May. As described by the College Board (www.collegeboard.com/apstudent), Calculus BC is concerned with developing students' understanding of the concepts of calculus while providing experience with various techniques and applications. The course emphasizes a multi-representational approach to calculus in which students learn to express the results of problems graphically, numerically, analytically, and verbally, and develop an understanding of the connections between these various representations. Although the course significantly develops students' manipulative and computational skills with calculus, the philosophy of the course is to develop students' understanding of the concepts of calculus through the inter-relationships between its various topics.

Course Expectations

Students entering this course are expected to have both a strong mathematical background and ability,

and to have mastered appropriate trigonometry and pre-calculus material. Typically, students successful in Calculus BC are ones that have been highly successful in a rigorous honors mathematics program since Grade 8. In addition, a successful Calculus BC student is typically one who is highly motivated, learns well independently, learns easily in a classroom environment, completes homework assignments as expected, is comfortable with a fast-paced, highly challenging curriculum, has an excellent memory, is attentive to detail, clearly presents supporting work when solving problems, and enjoys studying topics or concepts in-depth.

In Calculus BC, students can expect to be assigned a significant amount of work to be completed outside the classroom. This includes daily homework assignments, several “AP papers” or projects each semester, as well as work assigned between semesters and during holiday breaks.

Prerequisite

“A” in both Honors Trigonometry and Honors Pre-Calculus and consent of the instructor.

Required

A TI - 84 Plus or TI - 83 Plus graphing calculator is required. Note: A TI-89 calculator will not be allowed on tests.

Summer Work

There will be a short review assignment to refresh your brain before starting school.

Advanced Placement Statistics

Course Description

The purpose of the AP course in statistics is to introduce students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students are exposed to four broad conceptual themes:

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

Prerequisites

Successful completion of Algebra 2 or Algebra 2 Honors, with a grade of A or B, together with the recommendation from the Algebra 2 teacher that the student is ready for the rigor and work load of an AP class.

Required Materials

Students should have a TI 84 or TI Inspire calculator, graph paper, and a notebook/binder reserved exclusively for this class. Students will be required to buy *The Practice of Statistics*, 5th Edition, by Starnes, Yates, and Moore ISBN-13: 978-1464108730.

Summer Work

Students will be required to read *Naked Statistics* by Charles Wheelan. There will be a quiz over the reading on the first day of class.

Additional Teacher Comments

Advanced Placement Statistics is a college level course that emphasizes understanding over calculation. The emphasis is on understanding and explaining what the answer means in the context of the problem.

The depth of your understanding and the quality of your writing will determine your success in this class.

Advanced Placement Science Courses

Advanced Placement Biology

Course Description

This superb course is designed to be the equivalent of a one-semester general biology lab course usually taken during the first year of college.

Concepts developed in this class meet the Colorado State Science Standards as well as those of the College Board. In general, the course content is focused on cellular mechanisms and is built around four main concepts:

The process of evolution drives the diversity and unity of life.

Biological systems utilize free energy and molecular building blocks to grow, to reproduce, and to maintain dynamic homeostasis.

Living systems store, retrieve, transmit, and respond to information essential to life processes.

Biological systems interact, and these systems and their interactions possess complex properties.

Through the curriculum, the aim of the course is to achieve the following:

- *knowledge of the facts, principles, and processes of biology,
- *personal experience in scientific inquiry, including understanding the means by which biological information is collected, how it is interpreted, and how one formulates hypotheses from available data and makes further predictions,
- *recognition of unifying themes that integrate major topics of biology, and
- *application of biological knowledge and critical thinking around environmental/social concerns

Prerequisites

A or B in Chemistry or concurrent enrollment in Chemistry.

Required/Suggested Materials Needed

Students will need to purchase a textbook either in a paper or electronic format. We will be using the second edition of Hillis' *The Principles of Life*. Books may be purchased from former students or online as described in the summer assignment.

Optional: Some students may find it helpful to purchase a third-party study book to reinforce ideas and have practice questions to work on.

Summer Work

Students will need to read the first two chapters of the text book over the summer as an introduction to biology and a review of chemistry. More details about this reading and notetaking assignment will be provided prior to the end of the previous school year. Students will turn in this assignment at the start of the school year.

Additional Teacher Comments

In addition to covering the material that will be tested on the AP exam, the class introduces the students to a college level experience while still in high school. Students will be at a distinct advantage from taking this class. Due to the rigor of the class, students need to be able to work independently outside the classroom, should enjoy biology, and should be willing to spend an hour a day outside of class time immersing themselves in the study of life. This may include reading one chapter from the textbook each week, completing labs, and preparing for tests both alone and as part of a study group.

Advanced Placement Chemistry

Course Description

This course is designed to be the equivalent of a college freshman chemistry course. The College Board has outlined six “Big Idea” concepts to guide the chemistry curriculum for the course. The College Board has also outlined six “Science Practices” in which students will need to demonstrate proficiency.

- **Big Idea 1:** The chemical elements are fundamental building materials of matter, and all matter can be understood in terms of arrangements of atoms. These atoms retain their identity in chemical reactions.
- **Big Idea 2:** Chemical and physical properties of materials can be explained by the structure and the arrangements of atoms, ions, or molecules and the forces between them.
- **Big Idea 3:** Changes in matter involve the rearrangement and/or reorganization of atoms and/or the transfer of electrons.
- **Big Idea 4:** Rates of chemical reactions are determined by details of the molecular collisions.
- **Big Idea 5:** The laws of thermodynamics describe the essential role of energy and explain and predict the direction of changes in matter.
- **Big Idea 6:** Any bond or intermolecular attraction that can be formed can be broken. These two processes are in a dynamic competition, sensitive to initial conditions and external perturbations.

- **Science Practice 1:** The student can use representations and models to communicate scientific phenomena and solve scientific problems.
- **Science Practice 2:** The student can use mathematics appropriately.
- **Science Practice 3:** The student can engage in scientific questioning to extend thinking or to guide investigations within the context of the AP course.
- **Science Practice 4:** The student can plan and implement data collection strategies in relation to a particular scientific question. [Note: Data can be collected from many different sources, e.g., investigations, scientific observations, the findings of others, historic reconstruction, and/or archived data.]
- **Science Practice 5:** The student can perform data analysis and evaluation of evidence.
- **Science Practice 6:** The student can work with scientific explanations and theories.

The *College Board* stipulates that 25% of the class time be designated for laboratory work. Inquiry based learning will be emphasized during the laboratory experience. Students completing this course are required to take the Advanced Placement examination in May. Concepts developed in this class also meet the Colorado State Science Standards.

Prerequisite

Successful completion of a full year of high school Chemistry and Algebra II, preferably with a grade of A or B.

Materials Needed / Fees

- Students will also be required to purchase their own text books. The text is *Chemistry: The Central Science (11th Edition) (College Edition)* by Brown, LeMay, Bursten, and Murphy (ISBN-10: 0136006175 or ISBN-13: 978-0136006176). This book can be found **USED** on websites like Amazon.com. You will be responsible for purchasing your book prior to the class beginning.
- \$10 fee for lab materials, \$10.50 fee for on-line homework subscription (Total of \$20.50)
*Information about the online homework subscription will be given during the summer or at the

beginning of the school year. Please check your AP Chemistry teacher's web-page on information about the on-line homework service.

Summer Work

You will be contacted by your instructor prior to summer break with information regarding summer preparation for the course. Also, you can refer the Advanced Placement section of the Academics tab for more regarding summer work.

Additional Teacher Comments

If you have any inclination about entering a science related field as a college major, you should definitely consider enrolling in AP Chemistry. A freshman college chemistry class is part of many majors. Pre-med, pre-veterinarian, health fields, biological fields, geology, and many engineering fields all require a year of general chemistry at the college level. You would be giving yourself a major advantage in these fields/career choices if you have exposure to college level general chemistry prior to starting college. A strong ability in basic algebra is needed, so you may want to review some of you math skills before the course begins. Also know that your upper level math skills will be utilized quite often in the course. Knowledge and implementation of polynomials, logarithms, and natural logarithms are part of the problem solving required by the course.

Advanced Placement Environmental Science

Course Description

This fantastic yearlong course is designed to be the equivalent of a one-semester lab-based introductory college course in Environmental Science. This is an interdisciplinary course that includes the subjects of biology, chemistry, earth science, politics, behavior, and geography.

Concepts developed in this class meet the Colorado State Science Standards as well as those of the College Board. About half of the course content focuses on humans and their impacts on the planet. The other half addresses the science and mechanisms of environmental systems. In general, the course is built around four main concepts:

1. Ecology and how living systems operate.
2. Major abiotic factors: water, air, soil, and nutrients
3. Human population growth
4. Human dependence and impact on environmental systems

In addition to the content, this course focuses on critical thinking, application, and the scientific method.

Prerequisites

Completion of Biology with an A or B.

Required/Suggested Materials Needed

Students will need to purchase a textbook. We will be using the fourth AP edition of Withgott and Brennan's *Environment: The Science Behind the Stories*. Books should be purchased from former students or online as described in the summer assignment.

Optional: Some students may find it helpful to purchase a third-party study book to reinforce ideas and have practice questions to work on.

Summer Work

Students will need to read the first two chapters of the text book over the summer as an introduction to biology and a review of chemistry. More details about this reading and notetaking assignment will be provided prior to the end of the previous school year. Students will turn in this assignment at the start of

the school year.

Additional Teacher Comments

In addition to covering the material that will be tested on the AP exam, the class introduces the students to a college level experience while still in high school. Students will be at a distinct advantage from taking this class. Due to the rigor of the class, students need to be able to work independently outside the classroom, be interested in learning, and should be willing to spend an hour a day outside of class time immersing themselves in the study of humans and environmental systems. This may include reading one chapter from the textbook each week, completing labs, and preparing for tests both alone and as part of a study group.

Advanced Placement Physics 1

Course Description

This course is designed to be the equivalent of the first semester college course in *algebra-based physics*. Advanced Placement Physics 1 provides instruction in Newtonian mechanics, (including rotational dynamics and angular momentum); work, energy, and power. This course provides a foundation in physics for students in the life sciences, pre-medicine and some applied sciences. Students planning a career in engineering or the physical sciences should consider taking AP Physics C. Students completing this course are required to take the AP Physics 1 exam in May.

Prerequisites

Completion or concurrent enrollment in Trigonometry.

Required/Suggested Materials Needed

The textbook for this course is provided. There is a \$15 class fee which pays for the lab supplies and online homework system: WebAssign. It is also highly recommended that students purchase an AP Physics 1 review book early in the year as a reference and resource.

Summer Work

Students need to be comfortable with right triangle relationships – sine, cosine, tangent, and the Pythagorean Theorem. There will be a summer math assignment that can be found on the AP Physics webpage.

Additional Teacher Comments

This is a difficult course that requires a high level of determination and commitment. We will go through a wide range of topics in physics which will provide a great foundation for just about anything you want to pursue after high school.

Advanced Placement Physics C – Mechanics and Electricity & Magnetism

Course Description

This course is designed to be the equivalent of the general physics course usually taken during the first year of college. The first semester of this course is devoted to mechanics. The use of calculus in problem solving and in derivations is expected to increase as the course progresses. The second semester's primary emphasis is on classical electricity and magnetism. Calculus is used freely in formulating principles and solving problems. Individual research, laboratory and computer work are integral parts of the course.

Each semester is a separate course and there are two exams in May (one for Mechanics and one for Electricity and Magnetism that require a separate fee but also provide two individual scores).

Prerequisites

Successful completion of Trigonometry and Pre-Calculus, preferably with an A or B and concurrent enrollment in or completion of Calculus or AP Calculus.

Required/Suggested Materials Needed

The textbook for this course is provided. There is a \$15 class fee which pays for the lab supplies and online homework system: WebAssign. It is also highly recommended that students purchase an AP Physics C review book early in the year as a reference and resource.

Summer Work

There is an **optional** summer math assignment that can be found on the AP Physics C webpage. The intention of the assignment is to familiarize students with some basic calculus concepts. There will be a calculus quiz given within the first few days of the school year to determine who needs extra calculus support.

Additional Teacher Comments

This is a difficult course that requires a high level of determination and commitment. This course provides a great foundation for just about anything you want to pursue after high school.

Advanced Placement Social Studies Courses

Advanced Placement European History

Course description

The study of European History since 1450 introduces you to cultural, economic, political, and social developments that have played a fundamental role in the shaping of Europe and the world. This provides the context for understanding the development of contemporary institutions, the role of continuity and change in present-day societies and politics, and the evolution of current forms of artistic expression and intellectual discourse.

In addition to providing a basic narrative of events and movements, the goals of Advanced Placement European History are to develop:

- (A) An understanding of some of the principal themes in modern European history
- (B) An ability to analyze historical evidence and historical interpretation
- (C) An ability to express historical understanding in writing

The four key themes of this course are intellectual and cultural history, political and diplomatic history, and social and economic history.

Prerequisites

Successful completion of US History or AP US History, preferably with a grade of A or B, together with a recommendation from a US History teacher that a student is ready for the rigor of this course.

Required/Suggested Materials Needed

Students will need to purchase a copy of the textbook which they will be able to highlight and/or annotate. You may choose either the sixth, seventh, or eighth edition of Jackson J. Spielvogel's Western Civilization (Combined Volume) published by Thomson-Wadsworth, 2006 or later (ISBN 13:978-0-534-64602-8). Students can find these online (Amazon.com, etc) at various prices depending on the condition of the volume. The book should be purchased by June so students have sufficient time to accomplish the required summer reading.

Summer Work

Students need to read chapters 8, 9, 10, and 11 and take detailed notes on all of the information contained therein. These notes will need to be shown to the instructor during the first week of school. Students arriving without having completed their summer work may be asked to transfer out of the AP level course as the completion of this summer reading is indicative of the student's level of commitment. A lengthy test will be given over these chapters in the second week of school.

Additional Teacher Comments

Advanced Placement European History is a college level course of tremendous complexity and depth. Students are at a distinct advantage if they can take this course before they enter college. Due to the depth of content and level of critical thinking required of this class, students should enjoy both reading and writing and be willing to spend a large amount of time doing both.

Advanced Placement Human Geography

Course description: The purpose of the AP course in Human Geography is to introduce students to the systematic study of patterns and processes that have shaped human understanding, use, and alteration of the Earth's surface. They will employ spatial concepts and landscape analysis to analyze human social organization and its environmental consequences. Geographic concepts emphasized throughout the course are location, space, scale, pattern, regionalization, and place. They will study the dynamics of human population growth and movement, patterns of culture, economic use of the Earth, political organization of space, and human settlement patterns, especially urbanization. The course also examines the concept of region. A significant outcome of the course is awareness of the relevance of academic geography to everyday life and decision-making.

Prerequisites: Course is open to 9-12 graders and can meet the Geography and World Civilization graduation requirements, or count as elective credits.

Incoming 9th graders will need to also complete a Self-Reflection piece to gauge whether they are ready/prepared to enter this class.. This component is only required for 9th grade.

Required/Suggested Materials Needed: See teacher for book title

Summer Work: Check the AP website for summer work.

Additional Teacher Comments: Advanced Placement Human Geography is a college level course and is a good stepping stone for students wanting the challenge of an advanced class, but who have not yet taken one. Students are at a distinct advantage if they can take this course before they enter college. Students should enjoy both reading and writing and be willing to spend time doing both. It is also recommended that students are interested in the complexity of the world and its many different cultures.

Advanced Placement Macroeconomics

Course Description

The purpose of this course is to give students a thorough understanding of the principles of economics that apply to an economic system as a whole. Particular emphasis is placed on the study of national income and price-level determination, unemployment and inflation, and also develops students' familiarity with economic performance measures, the financial sector, stabilization policies, economic growth, and international economics.

The course is closely tied to following relevant current events in the rapidly changing field of economics and students will need to be cognizant of specific current examples to link to the major topics.

Prerequisites

Students need to have successfully completed the required social studies classes leading into senior year, with primary emphasis on AP Human Geography, AP U.S. History, AP European History, and AP U.S. Government and Politics. Students lacking substantial background in challenging social studies courses may require a teacher recommendation before being allowed to enroll in the course.

Required/Suggested Materials

Students will be required to purchase McConnell and Brue's **Economics**, 17th edition (McGraw Hill/Irwin, 2008). Purchasing the text online or from the previous year's senior class can result in substantial savings for the student. Students are strongly urged to read a daily source of economic news such as **The Wall Street Journal**, **The Economist** magazine, and other national and local publications.

Summer Work

Students entering the course with a strong awareness of current topics in economics will have an advantage over their peers. In addition, there are multiple publications in the field of economics which can give students a sense of what macroeconomics is all about. See your instructor for suggestions, if needed.

Additional Teacher Comments

Needless to say ours is a world undergoing massive economic transformation and flux. This course allows the student to rationally analyze the key economic concepts and issues of the day and to engage in meaningful discussions and debates as they enter the college environment. Economics requirements at the college level require a strong awareness and appreciation of our macroeconomic structure and this course will provide that.

AP Psychology

Course Description

This course is designed to introduce students to the systematic and scientific study of the behavior and mental processes of human beings and other animals. Students are exposed to the psychological facts,

principles, and phenomena associated with each of the major sub-fields within psychology. They also learn about the methods psychologists use in their science and practice.

Prerequisites

Recommended completion of Introduction to Psychology.

Required/Suggested Materials Needed

Myer's Psychology for AP – 3rd Edition, David Myers, BFW Publishers

Summer Work

Read Unit 1 and define all terms.

Advanced Placement United States Government and Politics**Course Description**

This AP course will provide students with an analytical perspective of the government and politics in the United States. This course includes both the study of general concepts used to interpret U.S. government and politics and the analysis of specific examples. It also requires familiarity with the various institutions, groups, beliefs, and ideas that constitute U.S. government and politics. In addition, students will become familiar with the variety of theoretical perspectives and explanations for various behaviors and outcomes. On completion of the course students should have achieved the following goals:

- know important facts, concepts, and theories pertaining to U.S. government and politics
- understand typical patterns of political processes and behavior and their consequences (including the components of political behavior, the principles used to justify various government structures and procedures, and the political effects of these structures and procedures)
- be able to analyze and interpret basic data relevant to U.S. government and politics (including data presented in charts, tables, and other formats)
- be able to critically analyze relevant theories and concepts, apply them appropriately, and develop their connections across the curriculum

To help students meet these goals, the course will cover the following topics: Constitutional underpinnings of the United States government; political beliefs and behaviors; political parties, interest groups, and the mass media; institutions of national government; public policy; and civil rights and civil liberties.

Prerequisites

Students are expected to successfully complete the various social studies courses which precede this senior-year course, including AP Human Geography, AP US History, and/or AP European History. Students lacking this background may require a teacher recommendation before being allowed to enroll in the course.

Required/Suggested Materials Needed

A course text will be provided but based on district funding issues; students may be asked to purchase future texts as needed. These can usually be found used at a reasonable cost.

Summer Work

No specific readings are required but students are encouraged to start closely following current events related to the national government. In addition, historical works on government and politics in the U.S. since the Great Depression can often help provide additional insight for the course.

Additional Teacher Comments

Few courses a student takes will be as relevant to the world in which we live as this one. Issues will be analyzed in depth, beyond the media's typical superficial analysis. Students will see how our democracy works and the vital need of citizen input into that process.

Advanced Placement United States History**Course Description**

The AP program in United States History is designed to provide students with the analytical skills and factual knowledge necessary to deal critically with the problems and materials in United States history. This program prepares students for intermediate and advanced college courses by making demands upon them equivalent to those of full-year introductory college courses. Students will learn to access historical materials – their relevance to a given interpretive problem, their reliability, and their importance – and to weigh the evidence and interpretations presented in historical scholarship. This course will develop the skills necessary to arrive at conclusions on the basis of an informed judgment and to present reasons and evidence clearly and persuasively in an essay format (CollegeBoard AP, United States History).

In addition to providing a basic narrative of events and movements, the goals of Advanced Placement United States History are to develop:

- (A) An understanding of some of the principle themes in United States History.
- (B) An ability to analyze historical evidence and historical interpretation.
- (C) An ability to express historical understanding in writing.

The major themes of this course are intellectual and cultural history, political and diplomatic history, and social and economic history.

Prerequisites

Successful completion of Honors World Civilizations, preferably with a grade of an A or B, together with a recommendation from a World Civilizations or a Intro to Geography teacher, that the student is ready for the rigor of this course.

Required/Suggested Materials Needed

Students will need to purchase the Advanced Placement United States History textbook for approximately \$80.00. Students who are unable to meet this requirement financially should speak with the instructors of the course in order to facilitate access to a textbook. Students will also need a notebook/binder reserved exclusively for this class.

Summer Work

Students will be required to familiarize themselves with the Pre-Columbian Era, Transatlantic Encounters and Colonial Beginnings Era, and the Colonial North America Era. An outline of this summer work, including reading requirements, will be provided for all students enrolled in Advanced Placement United States History prior to the end of the previous school year.

Additional Teacher Comments

Advanced Placement United States History is a college level course of significant complexity and depth. Students are at a distinct advantage if they can take this course before they enter college. Due to the depth of content and level of critical thinking required of this class, students should enjoy both reading and writing and be willing to spend a large amount of time doing both.

Advanced Placement World Languages

Advanced Placement German Language and Culture

Course Description

Students will engage in extensive discussions, write analytical essays, build their listening and reading skills, and learn detailed grammar concepts as they complete the College Board authorized course in advanced language. This course emphasizes the use of the language for active communication. In addition to the AP test preparation text, materials include audio and visual resources, online news articles, and authentic cultural activities.

Students will work to develop:

- A strong command of vocabulary and structure.
- An understanding of spoken German in various conversational situations.
- The ability to read articles, editorials, infographics, interviews and non-technical writing without a dictionary
- Fluency and accuracy in expressing ideas orally and in writing
- Language skills that are useful in a variety of activities and disciplines.
- Skill in the organization and writing of compositions.

Prerequisites

Successful completion of third year German, or an equivalent experience. The student needs to be ready for the rigor of this course.

Required/Suggested Materials Needed

Students will need to purchase an AP preparation text for approximately \$80. Other course materials will be provided.

Summer Work

Students are required to practice and learn the assigned AP Summer Vocabulary. Students are encouraged to listen to podcasts and read current events on the Deutsche Welle site. Please see the instructor for a current list of websites and activities for summer study.

Additional Teacher Comments

This course is an excellent place to practice speaking and listening in a small group with other students who are eager to learn.

Advanced Placement French Language and Culture

Course Description

Students will engage in extensive discussions, write essays and other communications, build their listening and reading skills, and learn detailed grammar concepts as they complete the College Board authorized course in advanced language. In this course they will be developing:

- the ability to understand spoken French from various sources and in various contexts.
- vocabulary through the reading of authentic materials (newspapers, magazines, on-line news sources, literature, etc.)
- the ability to read authentic texts without dependence on a dictionary.
- the ability to express themselves coherently and with reasonable fluency and accuracy in both written and spoken French.
- skills in the organization and writing of compositions and interpersonal communications (e.g. letters, emails, etc.)

Prerequisites

French IV or equivalent. The student needs to be prepared for a rigorous academic experience.

Required/Suggested Materials

Students will need to purchase the book AP French Language: Preparing for the Language and Culture Exam (Richard Ladd; Publisher: Research and Education Association) for approximately \$50. It is also highly recommended that they have a good French/English dictionary and the reference book 501 French Verbs (Christopher Kendris, published by Barrons). These can both be found at any major book store or on-line. There will also be a \$10 fee for a magazine subscription purchased through the school.

Summer Work

Though not required, students are encouraged to listen to authentic French materials including films (foreign films with or without subtitles, or familiar movies with the French language selected), podcasts, French music, on-line news sites, etc. Please see teacher for a detailed list of suggested films, music and websites.

Additional Comments

This course provides an excellent opportunity to practice speaking and listening in a small group setting with other highly motivated French students.

Advanced Placement Spanish Language and Culture

Course Description

This course offers students the opportunity to develop and demonstrate a high level of Spanish proficiency across the interpersonal, interpretive, and presentational communicative modes. The class is built around six course themes included in the AP Spanish Language and Culture Curriculum Framework: global challenges, science and technology, contemporary life, personal and public identities, families and communities, and beauty and aesthetics. Students enrolled in the AP Spanish Language and Culture class will be exposed to literature, culture, and current events occurring in the Spanish-speaking world via authentic audio and written texts. Students will use newspapers, magazines, blogs, literary texts, radio broadcasts, video, etc. By being exposed to the above types of texts, students will be able to develop their reading and audio comprehension abilities. The class is conducted entirely in Spanish.

The goals of the Advanced Placement Spanish Language are as follows:

- Students will be able to synthesize information from a variety of authentic written and print resources.
- Students will be able to synthesize information from a variety of authentic audio, visual, and audiovisual resources
- Students will be able to engage in written interpersonal communication.
 - In order to be able to engage in written interpersonal communication:

- Students will be able to plan and produce written presentational communications
- Students will be able to engage in spoken interpersonal communication
- Students will be able to plan, produce, and present spoken presentational communication
- Students will demonstrate an understanding of the features of target culture communities
- Students will continue to develop a passion for language and cultures studies

Prerequisites

High performance in Spanish IV or instructor recommendation for rigor of course.

Required/Suggested Materials Needed

Students will need a notebook/binder reserved exclusively for this class, a composition notebook, and a Spanish/English dictionary.

Summer Work

An outline of the summer work will be provided to students enrolled in the Advanced Placement Spanish Language prior to the end of the previous school year. This outline will include a list of reading, writing, and listening tasks to be completed prior to the start of the course.

Additional Teacher Comments

As the course instructor, I strive to prepare our students for the Advanced Placement examination and to challenge them to excel in a rigorous course comparable to the fifth or sixth semester of college study. We place great importance on development of language skills. Ultimately, we strive never to lose sight of our primary goal, which is that our students be able to communicate effectively and at a high level of Spanish about ideas, knowledge, opinions, values, and passions. Due to the depth of content and level of critical thinking required of this class, students should enjoy speaking, reading and writing in Spanish and be willing to spend a large amount of time doing such.

Student Name _____

Heritage High School Advanced Placement Agreement

We have read and discussed the Heritage High School Advanced Placement Handbook, the Advanced Placement Reality Check (see other side), and this agreement. We understand that these expectations and requirements include:

- Enrollment in the AP course for the whole year.
- Completion of summer course requirements. Not completing summer work is not a valid reason to drop an AP course.
- Required AP exams for all courses in which the student is enrolled.
 - If exam is not taken or if course is dropped, student will not receive weighted GPA.
- Payment of all fees required for AP involvement. These fees include:
 - Course fees
 - Fees for AP exams \$95 (AP Capstone course exams are \$143) – subject to change due to College Board
 - \$40 per exam non-refundable fee, paid in August and applied to the May exam fee. Courses dropped after Nov 1, 2021 cannot be refunded the deposit per College Board policy.
 - Purchase of AP textbooks, if required
- Schedule changes (dropping or adding an AP class) after the preview of schedules in May will be made with administrative approval and on a space available basis.

Please return this agreement with all signatures to your counselor on the date you will register for classes. Failure to return the AP Agreement will result in not being placed in an AP course.

Year of Graduation _____

Student Name _____

Student Signature _____

Parent Name _____

Parent Signature _____

Date _____

Advanced Placement Reality Check

This worksheet is meant to engender some serious thinking on your part about your schedule for next year. We would like you to think about your priorities and how you would like your life to unfold next school year. We encourage you to stretch academically, to participate in other activities and to be healthy. Answer these questions truthfully, talk to your parents, teachers, counselors, peers, and do some research about what particular schools want to see. We sincerely encourage you to get all the information that you can and then make the best informed decision for you.

Why am I considering an AP Course?

The right reasons:

- Love the subject
- Want to learn more about the subject
- Want to go into more depth in this area
- Want to challenge myself

Other reasons:

- Looks good on my college app
- All of my friends are taking it
- I am feeling pressured to take it
- Teacher recommends me, & I feel obligated

Is there summer work to prepare for the class and do I have time to devote to it during the summer?

Talk with the teacher for the course or view the summer work posted on the Heritage website under the Academics tab and Advanced Placement.

How much time do I have to devote to one or more AP Course during the school year?

- | | |
|---|---------------------------|
| Do I have a job? | Hours per day _____ |
| Do I participate in a sport or activity? | Hours per day _____ |
| Do I do volunteer work? | Hours per day _____ |
| Do I have responsibilities at home? | Hours per day _____ |
| Time required to do well in each AP Course. | Hours per day _____ |
| | Total hours per day _____ |

Questions to consider and discuss before I register.

Before you meet with your counselor, be sure that you have seriously considered the following questions and discussed them with your parents. While no one expects to be overwhelmed by too many commitments, it does tend to happen, even to the best of us.

- ☐ Am I taking the course(s) for the right reasons?
- ☐ Do I have enough time in the day for all of my commitments?
- ☐ How committed am I to doing well in this course if it proves a challenge for me?
- ☐ Have I considered the cumulative effect of taking multiple honors/AP courses?
- ☐ What will happen if this course load is difficult and I cannot change my schedule?
 - ⌵ Would I be willing to adjust hours or give up a job?
 - ⌵ Would I be willing to drop a sport or activity?
 - ⌵ Would I be satisfied with a grade less than a B?