

Central Memorial High School

Advanced Placement (AP) course guide

The Advanced Placement (AP) Program® fosters excellence in student achievement. Students who take AP® are challenged to think for themselves and to engage the world critically and analytically in and outside of the classroom. The AP® Program prepares students for future success. Students can earn advanced credit or advanced standing at thousands of colleges and universities based on AP® achievements. Central Memorial High School offers internationally recognized advanced placement programs for students who excel in academics and the arts. These programs provide students with opportunities to work on university-level courses in high school.

The Advanced Placement Advantage

- By participating in an AP course, students enter a world of intense discussion and thought. AP courses give students the intellectual responsibility to think for themselves and to learn to reason, analyze, and understand.
- AP allows students to undertake college-level academic learning and advance into second-year college or university courses that traditionally have a much smaller enrollment.
- Upon successful completion of an AP course, students are eligible to receive university credit and/or advanced placement at over 4000 colleges and universities worldwide.
- Research shows that AP students are more likely to graduate from university with a double major and are twice as likely to pursue a PH.D., or studies in medicine or law.

Program Flexibility

- Students may choose to take one AP course, several courses, or a full AP Program.
- Academic timetables can be tailored according to individual abilities, interests, and extracurricular time commitments.
- There is no cost to the student for AP core subjects. There can be some costs associated with AP programs such as Studio Art and there is a cost to take the AP exams.

AP course offerings are subject to course requests and enrollment.

Note that a student can not take a full complement of AP courses in grade 12 as they are offered second semester.

Talk to your guidance counsellor about taking a course in grade 11.

Characteristics of Successful AP Students

For all disciplines, students should possess or be willing to develop their:

- sense of determination to meet personal goals and develop their intellect;
- sense of perseverance and willingness to engage in learning;
- strong work ethic and management of multiple time demands;
- ability and motivation to work independently inside and outside of school;
- personal maturity and responsibility for their own actions;
- passion for learning in general and/or a specific discipline;
- willingness to be challenged and move outside of previous successes;
- willingness to share and listen to ideas, opinions, findings, theories, and research especially those distinct from their own;
- ability to use time wisely and productively

PVA AP Art and Design

The AP Art and Design Program offers studio art courses and portfolios in Two-Dimensional Design, Three-Dimensional Design, and Drawing. The AP Art and Design portfolios are designed for students who are seriously interested in the practical experience of art. Students submit portfolios for evaluation in late April.

The AP Art and Design Program consists of portfolios corresponding to the most common college foundation courses, AP Art and Design students create a portfolio of work to demonstrate the artistic skills and ideas they have developed, refined, and applied throughout their studies in the PVA program to produce visual compositions.

AP Biology

The key concepts and related content that define the revised AP Biology course and exam are organized around four underlying principles called the Big Ideas. The big ideas are evolution, cellular processes, genetics, and biological interactions. A more student-directed, inquiry-based lab experience supports the AP Biology course revisions and curricular requirements.

By maintaining an average of 75% or greater in Science 10 pre-AP, students may continue in Biology 20 Pre-AP. In either Grade 11 or 12, students enroll in both Biology 35 AP for 3 credits, which may be accompanied by a field trip to the Bamfield Marine Centre, and Biology 30 for 5 credits. By May, students are prepared to write the AP exam, and in June, the Alberta Diploma Examination. The field trip to the Bamfield Marine Station on Vancouver Island is part of the Biology 35 AP program (additional costs).

AP Calculus AB

AP Calculus AB is designed to be the equivalent of a first semester college/university calculus course devoted and structured around three big ideas: limits, derivatives, and integrals and the Fundamental Theorem of Calculus. The course focus on students' understanding of calculus concepts and provide experience with methods and applications. Through the use of big ideas of calculus (e.g., modeling change, approximation and limits, and analysis of functions), the course becomes a cohesive whole, rather than a collection of unrelated topics. The course requires students to use definitions and theorems to build arguments and justify conclusions. Students enroll in Math 30-1 AP first semester and Math 31 AP in the second semester.

AP Chemistry

AP Chemistry is a general introduction to chemical principles, with emphasis on problems and methods in Chemistry. The goals of the course are: 1) to introduce students to concepts required for solving problems in Chemistry and understanding chemical reactivity; and 2) to develop analytical and critical thinking skills for potential science majors.

Students who earn a mark of 75% or greater in Science 10 pre-AP may register in Chemistry 20 Pre-AP. Chemistry 20 Pre-AP begins with a microscopic description of the structures of atoms and molecules, including a description of electronic orbitals and their relationship to chemical properties. The properties of gases, liquids, solids and solutions including the basics of acids and bases are covered. The topics covered in Chemistry 30 AP are chemical equilibrium, thermochemistry, electrochemistry, and organic chemistry. The Chemistry 30 AP course is completed first semester and students write their Diploma exam in January. During the second-semester students enroll in Chemistry 35 AP (3 credits) where they take an in-depth look at thermodynamics, reaction kinetics, and solution equilibria, along with advanced bonding, and prepare to write the AP exam in May.

AP Computer Science A

This course is designed for students to learn fundamental software development concepts. Students will learn foundational concepts including object-oriented program design, algorithm design and analysis, abstract data structures, and the impact of computing on other disciplines. Students will also learn to develop programs in the Java language, which is widely used in industry and academia. Computer Science is a science that has created exciting fields such as computational linguistics, computational neuroscience, computational geometry, computational physics, etc. It is essential in econometrics, and for algorithmic trading in financial and energy markets, and has cutting edge applications in sociology and anthropology. AP Computer Science resources and assignments will be available at the advanced level, for students who wish to enrich and expand their understanding further, to take the AP exam externally from Central Memorial.

AP English Literature and Composition

The AP English Literature and Composition course is designed to engage students in the careful reading and critical analysis of literature. The AP method introduces students to an academic approach to reading, analysis and writing that will prepare them for Post-Secondary courses. One need not be an academic superstar for this course but students should have a love for reading, a keen desire to learn, the willingness to hone their skills and the curiosity to delve into the ways in which literature works.

In the course, students will learn to read deliberately and thoroughly, taking time to understand a work's artistic complexity, to absorb its richness of meaning, explore the its historical contexts and to analyze how that meaning is embodied in literary form. The normal course progression is ELA 10-1 Pre-AP, ELA 20-1 Pre-AP, and ELA 30-1 AP. However, students can join the AP stream in grade 11 or grade 12.

AP European History 35

Prerequisite course: Social Studies 20-1

AP European History is designed to be the equivalent of a two-semester introductory college or university European history course. In AP European History students investigate significant events, individuals, developments, and processes in four historical periods from approximately 1450 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 six themes that students explore throughout the course in order to make connections among historical developments in different times and places: interaction of Europe and the world; poverty and prosperity; objective knowledge and subjective visions; states and other institutions of power; individual and society; and national and European identity. *Offered in alternative years.*

AP Music Theory

The AP Music Theory course corresponds to one-to-two semesters of typical, introductory college music theory coursework that covers topics such as musicianship, theory, and musical materials and procedures. Musicianship skills, including dictation and listening skills, sight-singing, and harmony, are an important part of the course. Through the course, students develop the ability to recognize, understand, and describe basic materials and processes of tonal music that are heard or presented in a score. Development of aural (listening) skills is a primary objective. Performance is also part of the curriculum through the practice of sight-singing. Students learn basic concepts and terminology by listening to and performing a wide variety of music. Notational skills, speed, and fluency with basic materials are emphasized.

AP Physics

Beyond the comprehensive Alberta Physics 20/30 curriculum, students will study torque, rotational statics, rotational dynamics, angular momentum, and electric circuits. In this course, students will experience university level rigor and challenge enhanced by broad scope of the AP Physics 1 curriculum. The emphasis on laboratory design, data analysis and problem-solving puts students at the center of learning. This results in a more personal connection to physics concepts in the real world.