



**Grade 12 Academic Courses 2021-2022**

**English Options:**

- English 12 (CP, ACP, H)
- A.P. English Literature and Composition

**Math Options:**

- Algebra III/Trigonometry (CP)
- Pre-Calculus (ACP, H)
- Calculus (H)
- A.P. Calculus AB

**CTE Theory:**

- Career Technical Theory 12
- Anatomy & Physiology
- Computer Programming

**Lab-Based Science Options - NOTE: A 4th year of a lab science is recommended for all students anticipating enrolling at a 4 year college/university.**

- Chemistry (CP, ACP, H)
- Physics (CP, ACP, H)
- A.P. Physics
- Forensic Science (CP)

**Elective Options:**

- Spanish II (CP, ACP)
- Genocide Studies (ACP, H)
- Using History to Understand Contemporary Issues (CP)\* & Accounting (CP)\* (Two Semester-based Courses)
- Forensic Science (CP)

**BOLD** denotes required content course.

*\*Term length is semester based*



## **English 12**

**Course #: 1402, 1401, 1400**

**Level: Honors, ACP, CP**

This course focuses on a variety of literary and informational texts that include the Western cultural philosophies of nihilism, modernism, idealism, existentialism, and magical realism, including rigorous practice in research, informational writing, and personal narrative. Based on the learning standards of the *Massachusetts Curriculum Frameworks for English Language Arts and Literacy* (2017), students will identify critical lenses, recognize multiple themes, analyze in concrete and abstract perspectives, and evaluate multiple interpretations from secondary sources. Students will draw evidence from literary or informational texts to support their analysis, reflection, and research. Essays and discussions will relate the work to its historical circumstances, trace a symbol through a work or works, or consider a moral or philosophical question. The major works and ideas of Western literature will be addressed. All students will participate in quarterly common assessments. **Credits: 4**

## **Advanced Placement English Literature & Composition Course #: 1403**

**Level: AP**

In the A.P. English Literature and Composition course, students engage in becoming skilled readers of prose and poetry written in a variety of rhetorical contexts, and in becoming skilled writers who compose for a variety of purposes. Through critical analysis and focused writing, students learn the interactions among a writer's purposes, audience expectations, and subjects, as well as the way genre conventions and the resources of language contribute to effectiveness in writing. The course follows A.P. curricular guidelines and prepares students for the A.P. test, given in the spring. Students should expect challenging college-level content and a workload requiring nightly preparation and independent study. The accelerated pace of A.P. coursework is designed to parallel an introductory college semester course. Students are expected to take the College Board A.P. English Literature and Composition Exam in May. College credit may be applied with a score of three or higher on the College Board exam. **Credits: 4**

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**NOTE: Students who have not met the Competency Determination in Mathematics by earning the equivalent of a *Proficient* score of 240 or better on the Grade 10 Mathematics MCAS will be required to enroll in Algebra III during Grade 12. For more information see:**

**<http://www.doe.mass.edu/ccr/epp/qa.html>**

### **Algebra III/Trigonometry**

**Course #: 2400**

**Level: CP**

This course is based on the *Massachusetts Mathematics Curriculum Framework* (2017) learning standards and is a continuation of concepts presented in Algebra II with greater emphasis on real-world applications of mathematical concepts. The key difference from Algebra II is the emphasis on the connection between algebra, geometry and trigonometry. The focus of this course is exponential/logarithmic functions, polynomials, trigonometric functions and trigonometric identities. All students will participate in quarterly common assessments. ***Credits: 4***

### **Pre-Calculus**

**Course #: 2402, 2401**

**Level: Honors and ACP**

This course is based on the *Massachusetts Mathematics Curriculum Framework* (2017) learning standards for Precalculus and focuses on four critical areas: (1) extend work with complex numbers; (2) expand understanding of logarithms and exponential functions; (3) use characteristics of polynomial and rational functions to sketch graphs of those functions; and (4) perform operations with vectors. All students will participate in quarterly common assessments. ***Credits: 4***

### **Calculus**

**Course #: 2412**

**Level: Honors**

This course is for students who have successfully completed Precalculus and is based on the *Massachusetts Mathematics Curriculum Framework* (2017) learning standards for Calculus. The course will include a brief review of the critical concepts and skills covered in Precalculus followed by the concepts of limit, derivative, and definite and indefinite integrals. Techniques of numerical and closed form integration with applications of the definite and indefinite integrals will be studied. All students will participate in quarterly common assessments. ***Credits: 4***

### **Advanced Placement Calculus AB**

**Course #: 2443**

**Level: AP**

A.P. Calculus is a full year mathematics course, structured to closely resemble a first semester Calculus course in college. It is the intent of the course to develop a conceptual understanding and computational fluency in the basics of differential and integral calculus. This course will emphasize basic techniques, problem solving skills, critical thinking, and an understanding of various applications of calculus. Technology will also be emphasized as a problem-solving tool. Students will apply the techniques learned to a variety of different types of functions as well as different representations of functions, and use these to model real-world situations. The course will also introduce basic differential equations, and use them to model growth.

***Credits: 4***



### **Chemistry**

**Course #: 3402, 3401, 3400**

**Level: Honors, ACP, CP**

This course is designed to teach students the concepts of composition, structure and properties of substances and the changes they will undergo and is based on the learning standards for Chemistry in the *Massachusetts Science and Technology Engineering Curriculum Framework* (2016). . Topics will include the classification of matter, atomic structure, periodic table and chemical formulas, chemical reactions and gas laws. Students will utilize qualitative as well as quantitative approaches to predict outcomes and identify unknowns. Use of a scientific calculator is required. Strong math skills are recommended for the Honors Level. All students will participate in quarterly common assessments. **Credits: 4**

### **Physics**

**Course #: 3412, 3411, 3410**

**Level: Honors, ACP, CP**

This Physics course will introduce key concepts of the physical world including motion, energy, and electromagnetism based on the learning standards for Physics in the *Massachusetts Science and Technology Engineering Curriculum Framework* (2016). Hands-on labs will reinforce these concepts. Measurement and problem solving including graphing and critical thinking will be introduced. Technology will be used to analyze data collected in classroom lab activities. Use of a scientific calculator is required. Strong math skills are recommended for the Honors Level. All students will participate in quarterly common assessments. **Credits: 4**

### **Advanced Placement Physics**

**Course #: 3413**

**Level: CP**

A.P. Physics 1 is an algebra-based, introductory college-level physics course that will address the principles of Newtonian mechanics; work, energy, and power; mechanical waves and sound; and introductory, simple circuits. Laboratory-based inquiry learning will develop students' scientific critical thinking and reasoning skills. There is a mandatory summer assignment. Students are expected to take the College Board A.P. Physics Exam in May. College credit may be applied with a score of three or higher on the College Board exam. (Exam is scored from 1 – 5). **Credits: 4**

### **Forensic Science**

**Course #: 3440**

**Level: CP**

This is a lab-based elective designed to give students an in-depth look at the world of forensics. Students will be introduced to the basic application of science to the law. Students will learn how forensic scientists combine today's technology with the skills of the scientific community in order to help solve crimes. Topics covered include crime scene evaluation, fingerprinting, and DNA analysis; and the examination of current cases as they relate to these topics. **Credits: 4**



## **Spanish II**

**Course #: 6401, 6400**

**Level: ACP, CP**

Spanish II continues and solidifies the introduction to the Spanish language and culture with more extended vocabulary and grammar concepts. Students will continue to practice reading, writing, listening, and speaking in Spanish. Students learn how to conjugate stem-changing verbs in the present tense, as well as both types of past-tense verbs. Spanish I is a prerequisite. NOTE: The 2021-22 school year is the final year that this class will be offered in the senior year. All students will participate in quarterly common assessments. **Credits: 4**

## **Genocide Studies**

**Course #: 4481, 4482**

**Level: ACP, Honors**

This course examines the 20th century as “the century of genocide,” beginning with the Armenian genocide, the horrors of the Holocaust, and ending with the atrocities in Bosnia and Rwanda and the violence in Darfur, the Democratic Republic of Congo, and Northern Iraq. We will consider many questions in this course: What is genocide? Where did the term come from and how has it been defined and examined over time? What conditions lead to genocide? What are the warning signs? What allows people to act in such evil ways and what causes others to stand by? How can genocide be prevented? Which genocides have been emphasized, and which have been overlooked? We will explore these and other ideas through a historical lens, with critical review of primary sources and research, and through a literary lens, with first-hand accounts and survivor testimony. **Credits: 4**

## **Using History to Understand Contemporary Issues**

**Course #: 4410**

**Level: CP**

The 21st century has brought with it unprecedented access to information through various media sources. This presents an amazing opportunity for students to explore contemporary topics with an eye toward critical discernment of sources, and the agendas and motives behind them. This course will actively explore complex issues in our contemporary society through the prism of history. Topics include: globalism and nationalism, bias in media, the Culture War, economic trends of the modern world, and major social issues and their change over time. In order to become better-informed citizens, students will practice evaluating various sources of media and bias. This will be accomplished in a variety of ways including socratic seminar, project-based learning, and facilitated debates and oral presentations. This course is a semester class. **Credits: 2**



**Accounting**

**Course #: 2460**

**Level: CP**

Accounting is an applied mathematics course where students learn about the operational principles necessary for success in the workplace. Topics include basic accounting procedures, debits and credits, customer needs assessment, investment activities, analyzing, evaluating, and creating financial reports, and technology applications for operating systems and budgets. Building upon these topics, students will conduct a financial analysis of a real-world business organization. This course is a semester class. *Credits: 2*