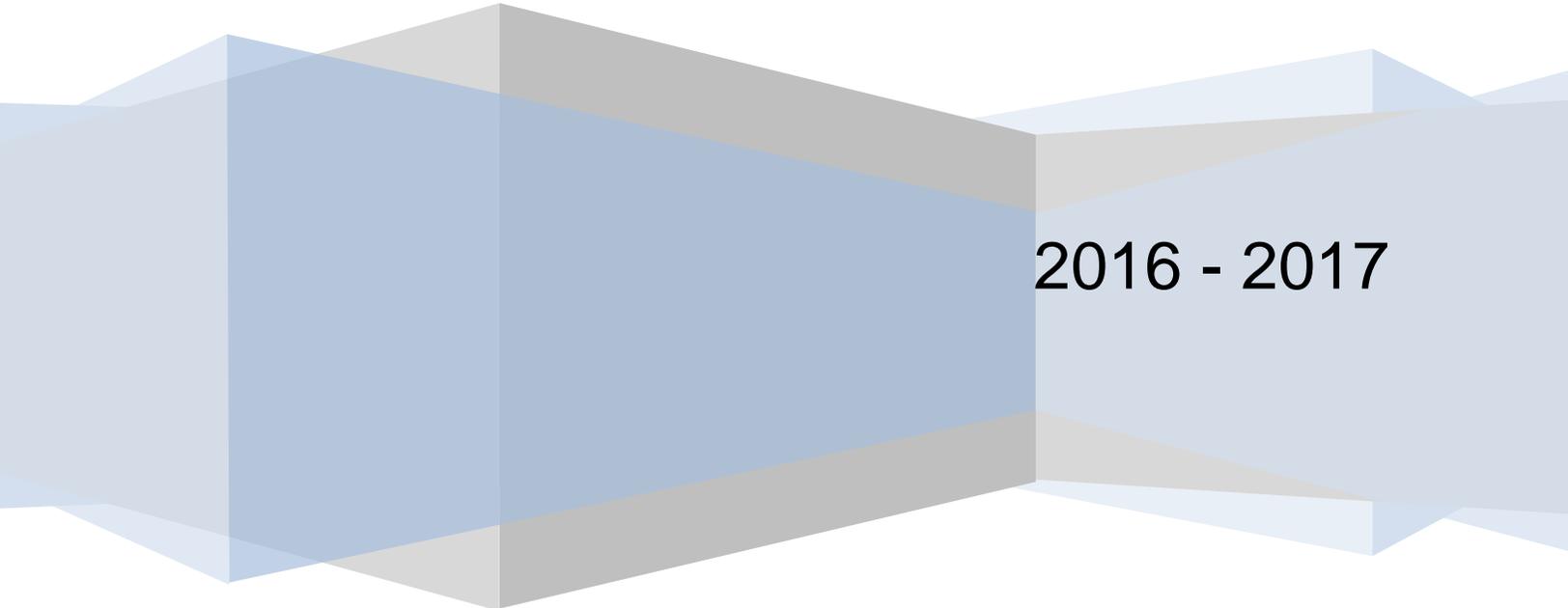


Harrisburg Academy Upper School Course Catalog



2016 - 2017

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Mission of the Upper School

The Harrisburg Academy Upper School is committed to providing a superior academic experience for its students. Maintaining and enriching academic strength is its highest priority. The purpose of the Upper School is to educate students in the fundamentals of the five major disciplines and in the fine arts and to develop in them the questioning skills and insight necessary to learn and to love to learn for themselves. In an atmosphere of close relationships with faculty and mutual peer support, students achieve independence and confidence in self-expression.

Supporting the academic program, the Upper School provides a wide variety of opportunities for learning and personal development outside of the classroom. Students participate in an open and broad array of varsity sports and activities which encourage self-discipline, leadership, effective interpersonal relations, and a commitment to excellence.

Students graduate from the Upper School of Harrisburg Academy prepared to enter college and adulthood as responsible, intelligent, sensitive, and articulate citizens.

The Harrisburg Academy Academic Program

Harrisburg Academy offers a college preparatory academic program. The Academy strives to promote in each student healthy lifestyle choices and to inspire curiosity, critical thinking, and a passion for learning that sets the foundation and provides the opportunity for a life both individually fulfilling and intrinsically valuable to the larger society. Our curriculum is sequential from kindergarten through the twelfth grade, and course offerings and content are systematically evaluated by the academic department chairpersons to ensure that the students are exposed to appropriate topics in an exceptional manner. The curriculum reflects the educational demands of the twenty-first century, as well as our sense of purpose and commitment to diversity and the growth of all learners within our community.

Academic Requirements

Students must take at least 5 majors each, physical education, and required enrichment courses each year. In addition, seniors must pass all courses taken during the second semester. Students may not take more than 6 major subjects under most circumstances. Scheduling considerations make it very difficult for a student to take more than two academic subjects in the same discipline. The Head of Upper School must approve any deviation from these academic requirements and parent approval will be sought. The minimum number of credits needed in each of the Upper School's departments in order to graduate is summarized in the table below.

Required credit courses

4 credits in English

3 credits in history, including U.S. History

3 credits (4 recommended) in mathematics, including Geometry and Algebra II

3 credits in science, including Biology, Chemistry and Physics

3 credits in the same foreign language (with dept. approval, 2 credits each in two languages)
1 credit in Art or Music
2 credits in physical education (including varsity sports participation)
Grade 11 Health
College Prep

Required non-credit courses

Physical Education each year (Pass/Fail)
Senior Internship (Pass/Fail/Honors)
CAS each year (Pass/Fail)
Senior Speech (Pass/Fail)

All Upper School students are required to take five full-credit courses; however, six full-credit courses is recommended. Semester and yearlong courses are available to students who have met the requirement and/or wish to take an additional course.

These requirements are based on a student's attending Harrisburg Academy all four years. Appropriate adjustments may be made for transfer students.

Senior Internship Program

The senior year culminates in an approved Senior Internship during the last weeks of the semester. At this time, each student participates in an individually-designed program allowing him or her to gain active, direct experience working and studying meaningful areas of interest. Successful completion of the Senior Internship Program is a requirement for graduation. Transcripts reflect Honors/Pass/Fail grade.

Creativity Action Service (CAS)

CAS is a framework for experiential learning, designed to involve students in new roles. The emphasis is on learning by doing real tasks that have real consequences and then reflecting on these experiences over time. This process of doing and reflecting on the doing provides an excellent opportunity to extend what is learned in the classroom to a form of service.

Non-IB diploma students must complete a 20 hour minimum in each of the three areas for a total of 60 hours per year. Documentation of activities includes a project log, evaluation for each project, and reflection on major projects.

IB diploma students must complete a 25 hour minimum in each of the three areas for a total of 150 hours over the two years. Evaluation and reflection form is required for every project submitted. Continuous communication with CAS Coordinator is essential for appropriate project selection.

CAS will be documented on student report cards. The number of hours completed in each area of CAS will be reported each semester. The final grade for CAS will be designated by Pass/Fail

according to the expected number of hours. The CAS Booklet contains specific guidelines and expectations for all students.

Senior Speech

The goal of Senior Speech is for students to become more experienced and confident public speakers. This presentation is a graduation requirement, and generally lasts three to five minutes. Delivered during Upper School Morning Meetings, senior speeches may address nearly any area of interest. Upon graduation, 12th grade students receive a recorded copy of their own speech, as well as speeches delivered by their fellow classmates.

Related Academic Policies

Course Credit

At the end of each semester and at the end of the academic year, credits are determined according to the number of class meetings per cycle and GPA's are calculated. Each cycle is six days in length. Credit is assigned to courses as follows:

Year course	5-8 meetings per cycle	1 credit
Year course	2-3 meetings per cycle	1/2 credit
Semester course	5-7 meetings per cycle	1/2 credit
Semester course	2-3 meetings per cycle	1/4 credit
Quarter course	4-5 meetings per cycle	1/4 credit

Exams and Final Grades

Students in the Upper School take exams at the end of the second semester in all major subjects. Exams are scheduled at the end of the second semester; students take no more than two 2-hour exams on any one day unless they have a conflict. Only the semester and year grades are recorded on the official student transcript. Second semester exams are worth 20% in introductory courses and 25% in all other courses.

International Baccalaureate and Advanced Placement Courses

The Harrisburg Academy Upper School is an IB World School offering the IB Diploma to students in the Grade 11 and 12 school years. Students may participate in the IB program as a course student or as a full diploma student. Most IB courses are two years in duration and contain both internal and external assessments. To learn about the differences between the course and diploma options and other details please visit the Academy's IB portion of our

website. The grades earned in IB higher level and year two of standard level Mathematics are weighted by adding a .333 value to the grade earned in the course.

Prior to the start of the school year students are asked to select courses. Courses selected are reviewed to ensure a proper match between the challenge of the course of study and the past performance of the student. As stated, most IB courses are two year courses and students should complete the full course, both years, in order to complete the objectives of the course.

Grade Point Average (GPA)

The Upper School faculty of The Harrisburg Academy evaluate student performance and grade point averages are computed according to the following scales:

Numerical Average	Letter Grade	GPA value
96.68+	A+	4.33
93.34 - 96.67	A	4.00
90.00 - 93.33	A-	3.67
86.68 - 89.99	B+	3.33
83.34 - 86.67	B	3.00
80.00 - 83.33	B-	2.67
76.68 - 79.99	C+	2.33
73.34 - 76.67	C	2.00
70.00 - 73.33	C-	1.67
66.68 - 69.99	D+	1.33
63.34 - 66.67	D	1.00
60.00 - 63.33	D-	0.67
below 60	F	0.00

Letter grades represent the following:

- A = Excellent
- B = Very Good
- C = Satisfactory
- D = Meets Minimum Requirements
- F = Does not meet minimum requirements

Academic Honors

Upper School students whose semester grade point average without rounding is at least 3.60 earn First Honors, and students whose semester grade point average without rounding is at least 3.10 earn Second Honors.

A student whose academic year grade point average without rounding is at least 3.60 or who earns First Honors for both semesters of an academic year receives the Head of School Scroll.

For seniors, the award is presented to them during the Commencement ceremony. All other students receive their award in the mail.

Senior Graduation Requirements

All seniors must satisfactorily complete all graduation requirements, including Creativity, Action, and Service hours and Senior Internship. In addition, all Seniors must earn passing grades in all second semester senior year courses. During the month of May IB and AP exams are usually scheduled by the IB and AP organizations. Depending on the course, Seniors may need to complete a final project or final exam.

Homework

Homework assignments in each class should approximate 30 minutes nightly, with more time expected when necessary for projects or papers, or before tests. Students in IB or AP classes may be expected to devote more time to the class depending on the assignment.

Upper School Caution List

The purpose of the Upper School Academic Caution List is to make the student and his/her family aware of an academic concern, usually a class grade average below the “C” level, in a particular subject. For several years now the Caution List has proven to be a beneficial tool for the parent–teacher partnership in that you are notified soon after a difficulty arises. In addition, the advisor is notified of the caution notification so that they can have a conversation with the student if necessary.

Upon receiving notification that your son/daughter has been placed on the caution list, please discuss the reason for the academic concern with your son/daughter and help him/her to determine a plan for addressing the academic difficulty. When their performance in the class shows improvement, and the grade in the course rises to the “C” level or better, the student’s name will be removed from the caution list. We will notify you again when this occurs.

Academic Services

MS/US Library

The Harrisburg Academy MS/US Library exists to implement, enrich, and support the educational programs and goals of the school. Library materials support the curriculum, offer enrichment for leisure reading, cover a wide range of difficulty and diversity of appeal, and present differing viewpoints. Students have access to quality, age-appropriate information in the form of books, eBooks, periodicals, scholarly subscription databases, and recommended websites. Most online databases can be accessed remotely through the MS/US Library website.

The librarian teaches information literacy through collaborative projects in many disciplines. Classes often meet in the library at the beginning of a research project for instruction on the best resources for that particular assignment, including lessons on locating, evaluating, and using

reliable information and proper MLA formatting of sources. In addition to designated class time, students in grades 5-12 may visit the library during study halls and free periods.

National Honor Society

The purpose of National Honor Society (NHS) is to promote academic excellence, develop character and leadership through example, and encourage empathy with and service to others. Membership in NHS is an honor and a privilege; it is not a right. Membership is not guaranteed by high scholastic standing alone.

New students to the Academy, who were selected to their previous school's chapter of the NHS, must achieve a 3.60 average for two quarters to remain eligible. It is a lifetime membership unless the member falls below the standards and is subsequently dismissed.

Standards

- To be considered for nomination to NHS a candidate must meet the minimal requirements described below.
- The candidate must have attended the Harrisburg Academy for the equivalent of one semester.
- The candidate must have a cumulative academic GPA of 3.60 on a 4.00 scale.
- The candidate must participate enthusiastically in the Harrisburg Academy's school CAS program.
- The candidate must have completed the Harrisburg Academy CAS requirement in a timely manner, that is 10 hours per semester, per year.
- The candidate must demonstrate a high degree of leadership, character, and service to school and community as outlined in the selection guidelines of the NHS Handbook. These are available from the chapter adviser upon request.

Nomination

Nominations will be made after the completion of the third quarter of the academic year. The chapter adviser will provide letters and packets to nominees. Candidates will be selected based on meeting the attendance, scholastic achievement, and school and community service criteria.

Selection

An interested nominee must fill out a Student Activity Information Form and obtain a letter of recommendation from an unrelated adult outside of the Harrisburg Academy. The chapter adviser must receive all of the information by the time and date indicated in the nomination letter. Late information will not be accepted, and the nomination will not be considered any further. The chapter adviser will provide a list of nominees to the Harrisburg Academy Faculty and a Faculty Evaluation Form. At this time the faculty has the opportunity to provide information about any or all of the nominees. The chapter adviser must receive the evaluations by the indicated time and date for it to be presented to the Faculty Council.

The Faculty Council, a group of five faculty members chosen by the Head of the Upper School each year, will meet to select those who qualify for membership in the chapter. The chapter adviser will provide the Faculty Council with all information submitted on time. No working notes will be retained after the selection process is completed.

Notification of selection decisions

All nominees will be notified of the selection of the Faculty Council by a letter mailed to the nominee at home. Information regarding the induction ceremony will be included in that letter.

Any questions or a request for further explanations should be referred to the chapter adviser. This process is outlined in the NHS National Constitution and Harrisburg Academy Chapter Bylaws. In accordance with the NHS Constitution, appeals of selection decisions may be made only if there was a procedural error.

Academic Assistance

Students are encouraged to see their teachers from 3:00 – 3:45 PM or during a mutually agreeable time to ask questions about course information and to receive help with their assignments or the course material.

Independent Study

Independent studies provide a way for students to receive academic credit for accelerated study in a particular discipline beyond the existing curriculum. Independent studies are limited to students who have demonstrated responsibility and the capability to sustain work. If an independent study is to be completed outside of The Harrisburg Academy, a cooperating faculty member from within the school will outline criteria for evaluation and credit for the course. If a student is interested in an independent study, the student must submit a completed independent study proposal form with the appropriate signatures at least two weeks before the first day of the semester during which the independent study will take place. The Curriculum Committee will consider the proposal and make a recommendation to the Head of Upper School.

Department Overview and Course Descriptions

The following are the descriptions of all courses offered in the Upper School. The courses offered depend on enrollment, interest, and availability of faculty. All of the offerings are rigorous, college preparatory courses, the equivalent of accelerated or honors courses in most public schools. The International Baccalaureate and Advanced Placement courses are college-level courses.

While suggested guidelines are offered in most departments for the grade levels appropriate for each course, these are indeed merely guidelines, not mandatory designations. Students with special interests or talents may select and take courses outside their grade levels with the permission of the Head of Upper School, the instructor, and their parents, schedule permitting.

English Department

The English curriculum of Harrisburg Academy focuses on helping students articulate their individual responses to three primary essential questions: *1. How does studying World Literature add to our personal development, self-understanding and ability to contribute our perspectives to the world, 2. Why is it necessary to learn grammar rules to achieve outstanding communication skills?, 3. Why is self-expression in the form of written sentences, paragraphs and compositions vital to becoming outstanding citizens of our world?* In the process of being prepared by our faculty to answer these questions, students take part in the understanding and analysis of world texts, the creation of efficient and excellent written communication and the development and mastery of social communication.

The faculty of the English Department employs a process of guided study that incorporates multiple teaching strategies and learning experiences to help students articulate thoughtful answers, supported by careful use of literary and linguistic material, to these three essential questions. At the conclusion of their experiences with the Academy's English curriculum, students will be able to answer these questions and will have gained the analytical, evaluative and research skills critical to any future study and understanding of the English language and World Literature.

- Development and mastery of basic writing skills and analysis of the development of British canonical literature over time (9th grade)
- Analysis of American literature from Early American time period to Contemporary literature with emphasis on American "consciousness" and conflict (10th grade)
- Create self-motivated analysts of World Literature, with a focus on Modernism and translated texts, and participate in an international program of skillful writing and speaking, learning to be high level critical thinkers (11th Grade IB HL)
- Create self-motivated analysts of World Literature and participate in an international program of skillful writing and speaking, learning to be high level critical thinkers (12th Grade IB HL)
- Analysis of language and literature with a varied multicultural/global perspective and emphasizing the development of skilled oral and written communication (11th/12th Grade IB SL and HL)

- Support the growth and creation of literate and informed citizens in the 21st century by refining the skills of integrating and evaluating diverse information and media through Library reading and research (Library)

Because the faculty of the English Department values the development of students throughout the curriculum, students are mentored to master the following essential skills:

- Work with electronic and print sources to aid analysis and develop themes for projects and papers
- Be able to recognize when information is needed and have the ability to locate, evaluate, and use that information effectively.
- Develop and use creative top-level research skills using library-quality electronic databases and non-traditional electronic sources.
- Express their ideas clearly in writing
- Cite specific textual evidence from literature and sources to support conclusions and evaluations
- Utilize MLA standards to research, organize and cite various sources
- Look for patterns rather than viewing literature as isolated texts, recognize the prevalence of common themes and understand the interconnectedness of literature to history and culture
- Utilize appropriate content-driven vocabulary in varied contexts
- Utilize literary elements and devices to analyze, evaluate and create texts and information

9th Grade English—British Literature

Year

1 credit

This course explores the development of British canonical literature over time, from Old and Middle English (in translation), through the Renaissance, to modern times. Students use multiple readings from varying time periods and classical mythology to practice making meaning and to create understanding, as they also improve their basic writing and analysis skills. Students will be given a variety of class activities and assessments using multiple modalities to enhance creativity, innovation, collaboration, and leadership.

10th Grade English—Conscience & Conflict in American Literature

Year

1 credit

Students develop an understanding of the history and cultural progress of our country through the critical study of American literature across varying time periods, ranging from Native American literature to the present. Harrisburg Academy students analyze and contextualize the evolution of American literature using a variety of critical theories and literary models, such as Historical/Biographical, Cultural, Romanticism, Modernism, and Post Modernism. Students demonstrate serious engagement with the texts through their class preparation, participation in discussions, and completion of a wide variety of assessments – written, oral, and creative.

11th & 12th Grade English—IB HL World Literature, Years 1 & 2

Year

1 credit

The first year of this two year International Baccalaureate course introduces students to a diverse range of texts from varying time periods, genres, authors, and countries. As is the intent of this rigorous IB program, this course encourages independent critical thinking and high level, in-depth analysis. Students are given a variety of class activities and assessments to enhance creativity, innovation, collaboration, and leadership. Students are required to develop not only their writing ability, but presentation skills as well, as they delve into increasingly complex texts.

In year two, this IB course asks students to “engage actively with the literature...and to embrace a working methodology that highlights independence of thought and creative, imaginative analysis of traditional and modern literary works.”* While this course is designed to help guide a student toward successfully completing the IB English A: Literature (HL) assessments, it also “aims to provide a broader preparation for successful reading, writing, speaking, and listening in university courses and beyond.”* The works read are discussed in terms of their stylistic effectiveness, the cultural values and topics addressed, common themes, and the public’s reception of the work both when initially published and over the course of time. Students reinforce and expand upon their knowledge of various literary theories and schools of criticism (i.e. New Criticism, New Historicism, Post-Colonial, Psychological, etc.) and work toward developing confidence in their presentation skills, critical thinking, and analytical abilities, particularly when faced with an unfamiliar work of literature.

11th and 12th Grade English—IB SL Language & Literature, Years 1 & 2

Year

1 credit

The first year of this two year International Baccalaureate course introduces students to the importance of cultural contexts in which works are written and received. This understanding leads to awareness of the different perspectives of people from other cultures and how these perspectives construct meaning. Another aim is to develop the students’ understanding of complex language, to form independent judgments, and to support those ideas. Students are given a variety of class activities and assessments, encouraging independent critical thinking and in-depth analysis, enhancing creativity, innovation, collaboration, and leadership. This is a discussion-heavy class. Additionally, students are encouraged to become self-motivated and exploratory, preparing them for the rigors of the International Baccalaureate program and beyond.

Year two is a continuation of the concepts and skills introduced in year one.

*IB Literature Program objectives – www.ibo.org

Enhanced Academic English

Year

1 credit

Texts:

<i>Vocabulary Workshop level E</i>	Sadlier-Oxford
<i>Composition Workshop level blue</i>	Sadlier-Oxford
<i>Literature Selections bronze level</i>	Prentice-Hall
<i>English purple level</i>	McDougal-Little
<i>Reading, Writing and Grammar Skillbook</i>	- Scott Foresman

Facility in reading comprehension and writing skills is emphasized along with correct grammar usage and improved vocabulary.

Written Work

Written responses to short stories enable the students to learn English skills to complement their grade-level English courses. In addition, grammar exercises reinforce the English skills necessary for good writing.

Oral Work

Oral work is limited to reading aloud and answering questions in class.

Enhanced Academic English at Harrisburg Academy is a full year course which meets six days of our seven day cycle. The course is designed to augment the reading, writing, listening, and speaking skills of our international students at the Intermediate level of English language mastery. The focus is directed to elevating student skills in reading comprehension and writing skills to the level required for successful completion of Harrisburg Academy literature and history classes. Emphasis is placed on vocabulary development, correct grammar usage, and varied sentence structure along with paragraph construction. Materials used include short stories of a range of genres, non-fiction reading and current event discussions.

11th and 12th: Theory of Knowledge

2 Years

½ credit/year

(IB Full Diploma Students only or Juniors with 4 or more IB courses in same semester)

The first sentence of Aristotle's *Metaphysics* states, "All men desire to understand the causes of things." If our human nature compels us to seek knowledge, then we should endeavor, through the Theory of Knowledge course, to deepen our understanding of what it is we know and how it is we know it.

Since Aristotle's description of man's thirst to understand causes, both the concept of "man" and our understanding of "knowledge" have changed. Through the expansion of technology during the last twenty years, the areas of knowledge, the ways of knowing, have grown exponentially, and as members of a global society which has experienced and been drawn together by such growth and change, each of us must examine and reexamine not only our preconceptions but the new perspectives available to us. We must not only believe, but understand why and how "other people, with their differences, can also be right."

While the 6 subject groups in the IB Diploma programme present the academic and interdisciplinary approaches to knowledge in their areas, the Theory of Knowledge course addresses the relationships between all of them, with the goal of developing “student knowers.” In order to help students see connections between—and suspend possibly absolute beliefs contingent within—individual subject areas, the Theory of Knowledge course will use “linking questions,” among other approaches to widen discussion, open minds, and challenge students’ critical and ethical thinking. Student “knowers” in this course will come to understand that their relationship to the known is influenced by, among other things, their personal beliefs, biases, social, religious and geographical communities and that, as responsible members of a global community, they must remain humble about claims of certain knowledge.

For the purpose of the Theory of Knowledge course, knowledge is divided into six areas—natural sciences, human sciences, history, math, arts and ethics—and each area contains problems which must be uncovered and examined in order to understand the power and the limitations of these kinds of knowing. The means of knowing—what the Theory of Knowledge course calls “ways of knowing” —similarly contain powers, problems and limitations which demand scrutiny. Studying these areas and means of knowledge, students see the links between the 6 groups of the Diploma Programme and develop a sense of belonging to a community of knowers whose ideas may be different, but whose respect for the search for knowledge brings them together.

Aims

The Theory of Knowledge course asks students to reflect on the foundations of knowledge so they can critically evaluate “knowledge claims.” They will ask themselves “How do I know?” and “What do I know?” Such evaluation will include recognizing the effect of personal and ideological biases, cultural perspectives, beliefs, opinions and dogmatic assumptions. Students and teachers (the TOK instructor and other IB Group visiting instructors) will not only wrestle with age-old questions of knowledge, but also examine the global changes introduced by information and internet technology, among other modern discoveries, and determine how one may react responsibly to them. Students will learn that proper evaluation of “knowledge claims” promotes internationalism as genuine truth and that knowledge unites—rather than divides—societies and countries.

Objectives

Having completed Theory of Knowledge, students will understand both the powers and the limitations of the various Ways of Knowing and will know the basic methods used by the Areas of Knowing. They will understand how their personal views, judgments and beliefs impact their quest for knowledge and will see the interdisciplinary connections between the Areas. They will learn that much knowledge starts with knowing what questions to ask, and how to recognize different perspectives. Students will be able to demonstrate their personal understanding to their peers and to outside examiners through oral and written presentations. Finally, students will demonstrate an improved capacity to reason critically, clearly, honestly, and logically.

History Department

History courses offered in the Upper School are designed to stimulate intellectual thought and growth. Choosing either the College Preparatory or IB tracks of study, students will find they will

be challenged to develop proficiency with a variety of processing skills. Students will be taught not to accept all concepts at face value and will be encouraged to investigate and analyze a variety of documents. Applying the process of historical methodology, students will learn to evaluate the relevancy of primary sources and the reliability of secondary ones. The course work requires that each student recognize the interconnections of common themes from past to present times and learn to develop their own perspective about these relationships. Students are challenged to offer opinions and insights in a variety of venues that include class discussions and more formal debates. Communicating effectively through the written word is an important aspect of the students' work and these courses will offer them a variety of written assignments to help their development as historical writers.

Foundations of World Religions and Civilizations **Year** **1 credit**
(9th grade)

This grade 9 survey course considers major world civilizations with special attention to belief systems, economic development, and political organizations. It emphasizes cultural diffusion by examining themes such as international trade, technology, warfare, diplomacy, and religious sects. The students learn vital writing skills like how to properly research, cite, and compose papers and essays. The students develop skills in critical reading of primary and secondary sources. In addition to standard history papers, all students complete a Historical Investigation that follows guidelines that are set by the IBO as a way to prepare the students for future success in our history courses. The material covered in this course will allow for the students to have a foundation of knowledge and skills that will be useful in future history courses.

The US & Its Relation to the World **Year** **1 credit**
(10th grade)

What is the role of the United States in the modern world? Starting with 18th century Enlightenment philosophies, students will explore how ideas inspired the American Revolution. This concept of revolution will be repeatedly studied as we compare and contrast subsequent conflicts – French, Russian, Chinese, and Mexican, among others – to the American model. A second major theme, revolutions in technology, will lay the groundwork for our study of imperialism. How did the United States claim an empire in the late 19th century only to frown upon neocolonialism in the 20th century? Finally, how did social revolutions in mid-20th century America reflect Gandhi's philosophies while also inspiring movements in Africa? Is the role of the United States that of world policeman, or has globalization created a shift in US global influence? This course will examine 18th-21st century US History with emphasis on how it has both impacted and been influenced by other nations.

IB History HL **2 Years** **1 credit/year**

This is a two-year IB level course for upper classmen that studies the Americas. The Americas include Canada, the U.S., Mexico, the Caribbean, and all of Latin America. The class will study domestic and foreign policies/actions of these areas over approximately the last one hundred fifty years. The class will study world trends and how they affect the Americas. The class will also look at how the Americas have affected world trends. There is an obvious interconnectedness of the world's civilizations. The world becomes smaller (figuratively) as this

course progresses. The world will deal with great wars, genocide, economic depression, and terrorism. The class will study the rise and fall of several leaders and their nations.

Elective Courses in History and the Social Sciences

Ancient Greece

Semester

½ credit

This elective class will study many ancient Greek texts that have been translated into English. The class will read and discuss mythology, history, tragedy, and comedy. In addition to ancient primary sources, the course will be supplemented by a modern secondary source entitled *Hellas*. (Not offered every year)

Ancient Rome

Semester

½ credit

Ancient Rome, like ancient Greece, has provided the modern world with the basis for many subjects and ideas. We will study many ancient texts that have been translated into English for us. In addition to these ancient primary sources, we will supplement with a modern secondary source entitled *Rome: Empire Without End*. This is a survey course and will highlight several aspects of the course which the instructor will choose. (Not offered every year)

20th Century US History through the Study of Popular Music Semester ½ credit

The United States is a nation of many different cultures. American popular music has reflected the political, social, and economic state of the nation. Sometimes the music helps break down cultural barriers and other times it creates stronger divisions. The course will give students the opportunity explore multiple genres from swing to bebop, country to blues, disco to hip-hop, funk to R&B, and of course rock & roll. We will study US history and note how music either was a reflection of or reaction to American life. Students will need to analyze popular music and the role that the following have played on the music: race relations, war/peace time, and economic conditions. The study will also include the various media that Americans have consumed and ways that they acquired their popular music. (Not offered every year)

The Cold War in Film

Semester

½ credit

This course will examine Cold War causes, events, and outcomes by utilizing films as historic artifacts. As topics are explored, films will underscore the tensions, anxieties, beliefs, and values of those who experienced the Cold War firsthand. The course will include the following film genres: documentary, cartoon, government propaganda, film noir, science fiction, and drama. Students will consider how each film represents a primary source for studying the Cold War. The ultimate aim of this course is to expose students to the major historical events and social effects of the Cold War, 1945-1991. Students will explore topics organized by unit themes. Each unit will include the viewing and analysis of one film produced during that era. (Not offered every year)

Comparative World Religions

Semester

½ credit

This one semester history elective will discuss the importance of religion to societies throughout the world's history. It will focus on the major religions of today: Hinduism, Buddhism, Jainism, Sikhism, Judaism, Christianity, and Islam. We will look directly at the struggles and similarities of

the three monotheistic religions that originated in Southwest Asia. The course will also explore the differences, whether through new sects or cultural diffusion, that have developed in these religions over the years. The interconnectedness will be discussed as well because so many ethics and stories are similar from religion to religion. Warren Matthews' World Religions will serve as the foundation of this course. (Not offered every year)

Great Speeches in American History

Semester

½ credit

How many times have we heard the phrase "I have a dream" or "Four score and seven years ago"? Yet, beyond such iconic American phrases, are we familiar with the speech in its entirety? This semester course will examine great speeches in American History, including selections that span the 18th through 21st centuries. Students will analyze the rhetoric of the speech and study the history surrounding the time such famous words were first proclaimed. What makes a speech truly great? Aside from historic details, students will identify the necessary elements in making a speech unforgettable and even timeless. A culminating project will entail none other than delivery of a famous speech not studied in the course. (Not offered every year)

Human Rights & Social Justice

Semester

½ credit

In 1948, the United Nations produced its Universal Declaration of Human Rights. Yet, atrocities against mankind have occurred since the time of early civilizations. What makes humans search for justice? Are human rights universal? Has the media desensitized us to human rights abuses? In this course, students will examine instances of human rights abuses in world history. From age-old problems including war and genocide to more contemporary issues such as human trafficking, we will investigate how social justice is sought and, in some instances, achieved. (Not offered every year)

United States Government

Semester

½ credit

The United States of America is a grand experiment that began over two hundred years ago. Like most idealistic systems, it has had success or failures depending on the people's involvement. We will examine the foundations of the U.S. government and the changes that have occurred since its inception. We will also look into patterns of history and why definitions have shifted for words like freedom and citizen over the years. Ultimately, the goal of this course is to encourage thinking among students who are approaching or are at voting age. (Not offered every year)

Constitutional Law

Semester

½ credit

This course looks at the foundations of the Constitution and the evolution of rights and privileges as determined over 200 years by the Supreme Court. What is freedom of speech? Do students have a right to privacy when it comes to their lockers? Can a NAZI group hold a parade in a Jewish neighborhood? These are just a sample of cases that make up Constitutional Law. Through discussion and plenty of debate this course will demonstrate that what you think your rights are may not be the case. (Not offered every year)

Modern Middle East**Semester****½ credit**

A study of the Middle East from the late 19th century to the present. The course would focus on the Zionist movement (the return of Jews to Palestine in large numbers in the late 19th century), World War I and the collapse of the Ottoman Empire through the period of mandates and colonialism. Post WWII would look at independence movements and hostilities that have shaped that area of the world. The collision of politics and religion are a centerpiece for this course. (Not offered every year)

**IB Information Technology in a Global Society (ITGS) SL
(Junior or Senior)****Year****1 credit**

The Diploma Programme information technology in a global society (ITGS) course is the study and evaluation of the impact of information technology (IT) on individuals and society. It explores the advantages and disadvantages of the use of digitized information at the local and global level. ITGS provides a framework for the student to make informed judgments and decisions about the use of IT within social contexts. (Not offered every year)

IB Global Politics SL (Junior or Senior)**Year****1 credit**

The 21st century is characterised by rapid change and increasing interconnectedness, impacting individuals and societies in unprecedented ways and creating complex global political challenges. Global politics is an exciting, dynamic subject that draws on a variety of disciplines in the social sciences and humanities, reflecting the complex nature of many contemporary political issues. The study of global politics enables students to critically engage with different and new perspectives and approaches to politics in order to comprehend the challenges of the changing world and become aware of their role in it as active global citizens.

The global politics course explores fundamental political concepts such as power, equality, sustainability and peace in a range of contexts. It allows students to develop an understanding of the local, national, international and global dimensions of political activity and processes, as well as to explore political issues affecting their own lives. The course helps students to understand abstract political concepts by grounding them in real-world examples and case studies. It also invites comparison between such examples and case studies to ensure a wider and transnational perspective. (Not offered every year)

Department of World Languages

The Department of World Languages of Harrisburg Academy seeks to deepen students' appreciation of global cultures and to develop students' proficiency in understanding, speaking, reading and writing a foreign language. Such proficiency has become an increasingly important skill as our world community shrinks through advances in communications and transportation technologies. Those entering the Academy after their freshman year must meet with a language teacher and/or take a test to determine appropriate placement.

The small class sizes at the Academy give students an exceptional opportunity to speak the language every day with constant feedback from one another and from the teacher. If students

choose to continue their language study in college, the successful completion of the Academy's requirement will give them a solid preparation.

In the first two years of each language, basic grammar and vocabulary are stressed, and modern language classes are conducted primarily in the target language. Students are encouraged to think about the similarities and differences between their own language and culture and those they are studying. In advanced levels, students focus on more sophisticated grammatical structures while also studying literature and films, and they write progressively longer compositions. Modern language classes are conducted in the target language.

The philosophy of the department is that it is not sufficient to master the grammar of a world language. Students must internalize the grammar through daily practice of the four communication skills: listening, speaking, reading, and writing. Students with established fluency in Spanish or French must earn at least 2 credits in another foreign language.

Latin I	Year	1 credit
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Latin I establishes a solid foundation for students to continue to Latin II. The focus of this class is on elementary grammar and vocabulary. Students learn all five cases and all five declensions. The students learn four tenses, two moods, and all five conjugations. Students will learn to pronounce Latin in the classical manner, but this is not the most important aspect of the class. We discuss and read about many aspects of ancient Roman culture. One of the most important outcomes of this course is that students understand the value of a consistent, diligent effort and how it relates to academic success. This course follows the grammar and vocabulary that the *Oxford Latin Course* textbook provides.

Latin II	Year	1 credit
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Acquisition and mastery of Latin vocabulary and grammatical concepts paramount to building a strong foundation for Latin III.

The year will start with a 3 week review of Latin I vocabulary. Review will take various forms including games, worksheets, and quizzes.

The student will continue to build his/her Latin vocabulary and grammar, reading and comprehension skills. Sentences become more complex and grammatical concepts more abstract. They will continue to learn more about Roman culture and history via the life and exploits of Quintus Horatius Flaccus (Horace), a Roman poet.

Latin III	Year	1 credit
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This is the most grammatically challenging year. The students' ability to identify and analyze the sentence structure is stressed.

At the end of Latin III, the students will have learned all of the elementary Latin grammar and will be ready to read from primary source in classical Latin.

There is an emphasis on reading and reciting the language aloud.

French I **Year** **1 credit**

Students in this introductory level course build basic communication skills in French and are introduced to French culture. A strong emphasis on grammar and useful vocabulary enhances reading and writing ability, while oral and listening skills are also stressed. In addition to the textbook, many other tools such as magazine ads, cartoons, games, and simplified stories encouraged active participation. Our basic text, *C'est à toi*, is supplemented by a student workbook and accompanying video and audio materials.

French II **Year** **1 credit**

Students in Level II French will continue to build upon their knowledge of French grammar and will practice speaking, listening, writing, and reading. Our text series, *C'est à toi*, includes a student textbook, workbook, and an accompanying program of CD's featuring a variety of native French speakers. In addition, we will enjoy the popular video sequences which relate to each lesson in the text.

Supplementing the core materials will be simplified stories, poems, popular songs, and articles whenever appropriate. Such ancillary materials help students see the study of grammar not as an end in itself, but rather as an aid to real communication.

French II is a very participatory class. Games, cartoons, and unstructured conversation encourage the use of French and make learning active and enjoyable.

French III **Year** **1 credit**

Third year students increase proficiency in speaking and listening as they master more complex grammatical structures. The text series, *C'est à toi*, includes student book, workbook, audio CD's and an accompanying video program. This level of the series puts particular emphasis on the diversity of the francophone world, and thus native voices from Canada, the Antilles, and Africa are occasionally featured on recordings. In French III, students will benefit from exposure to many ancillary resources such as magazine articles, French music, poetry, and newspaper articles. A program of free reading, using the in-class library of French language books and materials, is introduced.

French IV / IB French SL, year 1 **Year** **1 credit**

French IV students have completed a general study of French grammar. At this level, they are ready to begin applying their knowledge to reading and listening to even more authentic sources. The text, *Trésors du temps*, takes students on a chronological voyage through the highlights of French history, exposing them to samples of literature and art from each era. Essentials of grammar will be reviewed and reinforced as well. This study begins with prehistory and concludes with the dawn of the twentieth century, *reached sometime after the start of the third marking period*.

Toward the end of the school year, students embark upon a writing project designed to enable them to gather all their language proficiency and express themselves in creative writing and speaking.

French V / IB French SL, year 2**Year****1 credit**

Students taking fifth year French have mastered the grammar and listening skills necessary to move beyond the language textbook. They will read authentic works of modern French / Francophone literature which may include those of such authors as:

Marcel Pagnol
Albert Camus
Michèle Marineau
Françoise Sagan
Brigitte Smadja

The class also reads and discusses works by francophone authors reflecting current issues and attitudes important throughout the French-speaking world.

Classroom discussion is conducted in French, and students are responsible for understanding and contributing to the conversation. They will view, discuss, and write about several French films and listen to popular music. A comprehensive grammar review book, *Une fois pour toutes*, will be used as a resource for reinforcing grammatical competence. A new text, *Le Monde en français*, will accustom students to IB testing methodologies and expose them to current issues and themes emphasized in the IB curriculum.

All students will participate in interactive oral activities as defined by the IB curriculum and will research a topic of interest for oral presentation.

Spanish I**Year****1 credit**

Spanish I is an important course that establishes a solid foundation for students to continue to Spanish II. In Spanish I our focus will be to enjoy learning how to apply their knowledge as they begin to use Spanish in all skill areas: reading, writing, speaking and listening. Students will be expected to use the Spanish they are learning in the classroom to communicate with the teacher and the student's classmates. We will learn and apply basic grammar structures to communicate information that will cover a variety of topics: going to a restaurant, shopping, going to the doctors among many others. Students will be expected to meet the structural (grammar and vocabulary) and communicative (written and spoken) objectives as outlined in *En Español Uno*, the text currently being used at Harrisburg Academy.

Spanish II**Year****1 credit**

Spanish II continues to build a foundation and create a source from which students can draw to become more proficient in Spanish. In Spanish II our focus will continue to learn grammatical concepts and thematically related vocabulary as students improve their proficiency in all skill areas – reading, writing, speaking and listening. Students will be expected to meet the structural (grammar and vocabulary) and communicative (speaking and writing) objectives as outlined in the scope and sequence of *En Español Dos*, the text currently being used at

Harrisburg Academy. Students will begin with a review of basic grammatical concepts and continue to build their base of knowledge as they prepare for Spanish III.

Spanish III **Year** **1 credit**

Spanish III builds on the foundation established in Spanish I and II. In Spanish III our focus will be the people and places of the Hispanic world while students continue to improve their proficiency in reading, writing, listening and speaking. Student will be expected to meet the structural (grammar and vocabulary) and communicative (written and spoken) objectives as outlined in the scope and sequence of *En Español Tres*, the Spanish text currently used at Harrisburg Academy. Students will review important grammatical concepts and continue to build their base of knowledge as they study more complex structures and concepts, thus preparing them for Spanish IV, where that knowledge is requisite.

Spanish IV / IB Spanish SL, year 1 **Year** **1 credit**

Spanish IV is an advanced Spanish class which will draw on each student's source of grammar and vocabulary, a base of knowledge built during Spanish I, II and II. Students will navigate a survey of art and modern literature of the Hispanic world, providing a solid foundation for further study in Spanish V. Students will continue to sharpen all skill areas – reading, writing, listening and speaking – as they review and apply more complex grammatical structures. The course objectives primarily focus on reading and writing with a strong emphasis on discussion in the target language. Students will be expected to meet the objectives as set forth in *Galeria de arte y vida*, the text used in Spanish IV at Harrisburg Academy. J Spanish IV students are expected to be able to speak and write in the target language about the works they will be studying.

Spanish V / IB Spanish SL, year 2 **Year** **1 credit**

This course represents the most advanced level offered at the Academy. Open to advanced students, at the discretion of the instructor, this level of Spanish will primarily involve intensive reading of advanced literature as well as a review of complex grammar structures.

IB Spanish Ab Initio SL, year 1 **Year** **1 credit**

IB Spanish Ab Initio SL, year 2 **Year** **1 credit**

Learning a foreign language is much more than learning a number of sentences, a certain amount of vocabulary or a number of grammatical rules. It means being able to interact in a new cultural context that will enable us to function in a society different from our original one. It not only expands our possibilities for work, entertainment or travel, but it expands our awareness of the world as we know it today—a world that has shrunk due to international flights, the Internet, and a general understanding that cultural diversity is what makes us human.

It is within this context that the language *ab initio* course was designed. It is an opportunity for students to further their linguistic skills by taking up a second foreign language, or for students to

learn a foreign language for the first time. In accordance with the international and multicultural ethos of the Diploma Program, all candidates are expected to learn at least one foreign language. Although the International Baccalaureate Organization does not subscribe to one

particular approach to the teaching of foreign languages, both the aims and assessment of language *ab initio* focus on communication through the use of the target language.

The Spanish *ab initio* course is a language learning course for beginners, designed to be followed over two years by students who have no previous experience of learning the target language. The main focus of the courses is on the acquisition of language required for purposes and situations usual in everyday social interaction. The Spanish *ab initio* course is only available at the standard level.

Mathematics Department

The emphasis of the Academy's Mathematics Department is on developing good problem-solving and analytical thinking skills while reinforcing computational skills learned in the Lower and Middle Schools. Students are expected to be familiar with standard mathematical vocabulary and symbols, the structure and properties of the various number systems, and basic geometric properties. Through the lessons in class and the completion of daily homework assignments, students extend their computational skills, appreciate the structure of mathematics, and demonstrate valid logic. Assignments which reinforce problem-solving skills are essential to the IB curriculum, as well as Pre-Calculus and Calculus, and require students to demonstrate analytical thought and use of appropriate mathematical vocabulary.

Technology

Students in all Harrisburg Academy Upper School mathematics classes must have access to a graphic display calculator (GDC). The department recommends the TI-84 Plus.

Course Alignment

Freshmen and sophomores extend their basic mathematical skills with courses in either Intermediate Algebra or Algebra II and then Geometry. Intermediate Algebra strengthens the foundations of Algebra I and challenges the students to become more computational literate while helping them develop analytical skills. Algebra II emphasizes equation-solving skills, graphing, and applications including a variety of word problems. Geometry emphasizes application of geometric concepts as well as algebraic applications and deductive reasoning.

Juniors may study IB Mathematics Higher Level (HL) I, IB Mathematics Standard Level (SL) I or IB Mathematical Studies SL I, as part of the IB Diploma or in pursuit of IB certification. Another option available to juniors is Pre-Calculus (which is co-seated with IB Mathematics SL I). These courses extend basic algebra skills and focus on the concept of functions, with increasing emphasis on graphing and modeling. Juniors who do not plan to take Calculus do not need to take Pre-Calculus.

Seniors who have successfully completed the first year of an IB Math course should continue in the second year of that same course, IB Mathematics HL II, SL II or IB Mathematical Studies SL II. Seniors who have earned a B or better in Pre-Calculus may elect to enroll in Calculus (co-seated with IB Mathematics SL 2). IB Mathematics HL/SL 2 and Calculus are the equivalent of college-level Calculus courses and includes thorough investigations of limits, derivatives, integrals, and their applications. IB Mathematical Studies focuses on topics in statistics and

trigonometry. Statistics is offered as a Senior elective course. The AP Statistics exam may be completed independently in conjunction with the Statistics course.

These Mathematics courses provide a sound basis for college, reinforce computational and analytical thinking skills, and instill in students an appreciation for mathematics and its applications to related topics in science and the humanities. Students may accelerate their mathematics program in order to include Calculus in their course of study. To do so, the student must receive the prior permission of the department and a *demonstrated* strong aptitude for and commitment to mathematics.

Graduation Credits **required:** 3 years including Algebra II and Geometry;

Department **recommendation:** 4 years

Algebra II (Freshmen through Juniors—required)

Year Course 1 credit

Prerequisite: Successful completion of Algebra I.

Algebra II provides a review and thorough extension of Algebra I, followed by a study of advanced algebraic topics including polynomials, exponents, logarithms, solving systems of equations including using matrices and determinants, and coordinate geometry. Conic sections and statistics are studied, if time permits. Strong emphasis is placed on concept development, and on connections among topics. An increased emphasis is placed on analytical thinking skills, and students are expected to demonstrate their understanding of the various topics by completion of projects. Evaluation is based on performance on daily assignments (both in class and homework), quizzes, tests, and projects.

Text: *Prentice Hall Algebra II* Hall and Fabricant

Intermediate Algebra (Freshman)

Year Course 1 credit

This course will provide a review of basic algebra concepts related to equations and inequalities, factoring, rational expressions, and systems of equations, with an emphasis on strengthening these foundational elements. Additional algebraic topics may include exponents, logarithms, and sequences and series. Evaluation is determined by daily assignments (both in class and homework), quizzes, and tests. This course is offered for students who have completed Algebra I. *Students have the option of sequencing into Algebra II or one of the IB math options to fulfill their graduation requirement.*

Text: *Intermediate Algebra* Bittinger

Geometry with Trigonometry (Sophomores - required)

Year Course 1 credit

Prerequisite: Successful completion of Algebra II or Intermediate Algebra.

Geometry is the formal study of lines, arcs, and circles in planes and space. The course begins with the introduction to geometric figures, such as points, line, angles, and planes. Triangles are classified by the various types and then congruency theorems are developed. At this point there is a heavy emphasis on deductive reasoning. Parallel lines and quadrilateral are then introduced, and the topics are expanded to other polygons. The focus returns to triangles with the study of similarity and the Theorem of Pythagoras. Circles round out the geometric topics covered. An introduction to trigonometry includes definitions of trigonometric ratios and solving triangles using Law of Sines and Law of Cosines. The end of the course is a review and expansion on area, surface area, and volume applying concepts developed throughout the

course. Students are expected to relate the concepts studied to solve algebra problems, as well as to write formal proofs, and are given daily assignments to reinforce lessons learned in class. This course is valuable for sophomores in its emphasis on adequate understanding and retention of geometric concepts for the PSATs and the SATs. Evaluation is based on performance on classwork, homework, quizzes, tests, and projects.

Text: *Geometry for Enjoyment and Challenge* Rhoad et al.

IB Mathematics HL or SL (Junior and Senior Year) 2 Year Course 1 credit/year

Prerequisite: Completion of both Geometry and Algebra II with a grade of B or better.

IB Mathematics HL and SL courses are two-year courses following the curriculum outlined by the International Baccalaureate Diploma Programme. These courses are offered to capable students who have demonstrated proficiency and analytical ability in mathematics and will provide them with skills to be successful in Calculus. Students should have a strong algebraic background and familiarity with appropriate mathematical terms and abbreviations as well as a strong interest in furthering their mathematical background in preparation for university courses such as mathematics, chemistry, physics, business, and economics.

Students will be encouraged to develop an appreciation of the global nature of mathematics and the contributions that have been made by persons from a variety of cultures. In addition, students will learn vocabulary and notation from other cultures, as well as historical anecdotes about specific topics.

The first year of the Mathematics HL and SL courses begin with a review of topics from Algebra related to linear and quadratic functions, followed by trigonometric functions, exponential and logarithmic functions, sequences and series. The HL course continues with the study of polar functions, functions in the complex number system, matrices and linear systems, and a unit on differentiation. The SL course ends the first year with a study of probability and statistics and an introduction to derivatives. Analysis of the graphs of these functions will be a major focus of the courses. During the second year, the Mathematics HL and SL students will learn differential and integral calculus and expand their knowledge of topics related to vectors, kinematics, and set theory. In addition, the HL students expand the study of calculus to include the limit theorems and convergence of series, and to use calculus results to solve differential equations.

Throughout the two years students will be expected to use an appropriate mathematics vocabulary and to demonstrate the ability to apply what they have learned by solving real-world application problems including algebraic, geometric, verbal, and graphical interpretation of the topics.

There is an internal and external IB assessment for these courses. The internal assessment is a mathematical exploration. The emphasis is on mathematical communication, and the intention is to provide students with opportunities to increase their understanding of mathematical concepts and processes while developing a wider appreciation of mathematics. It is marked using IBO standards and criteria and may be submitted to the IBO. In May of the second year, students will complete the external assessment which is three exams for the HL students and two exams for the SL students, one using a graphic display calculator and one without, both prepared and marked by the IBO.

This SL course co-seats with PreCalculus during the first year and Calculus during the second year. HL students who have not previously completed a Statistics course will take a Statistics seminar during the interim summer.

Text: *PreCalculus (9th Ed.)* Sullivan

Understandable Statistics Brase/Brase
Calculus - Early Transcendentals Anton, Bivens
Calculus - Graphical, Numerical, Algebraic Finney
Oxford Mathematics Higher Level Fensom, et al
Mathematics SL Haese and Harris

IB Mathematical Studies SL (Junior and Senior Year) 2 Year Course 1 credit/year

Prerequisite: Successful completion of both Geometry and Intermediate Algebra or Algebra II.

IB Mathematical Studies SL course is a two-year course following the curriculum outlined by the International Baccalaureate Diploma Programme. It is intended for students who have demonstrated proficiency in mathematics but whose academic pursuits do not include college studies requiring rigorous mathematical study. In Math Studies, although students will broaden and expand their understanding of the concepts from algebra and geometry, the emphasis will shift towards the critical thinking skills necessary to analyze and interpret data as it occurs in real world applications.

The first year of Math Studies focuses on algebra topics. The students will become comfortable with different types of functions and learn to analyze the nature of the functions by their graphs. Other topics included in the first year of study are surface area and volume of geometric figures and an introduction to derivatives. The second year will focus on probability and statistics, including ways of collecting, managing, analyzing and interpreting data, and trigonometry. Capable students will be familiar with appropriate mathematical terminology and notation and will expand on them and be expected to use them consistently and appropriately. Students will learn how to formulate mathematical arguments and strengthen them with accurate tables and/or graphs.

An important aspect of this course is to show the cohesive nature of the study of math. Not only does each new concept depend on an understanding of previous work, but each new development in our history has required and allowed for new courses of study in math. Over the duration of this course, we will explore the global nature and historical context that are essential elements in the study of math. Students will learn that all regions of the world have played and continue to play a vital role in the development of math.

There is an internal and external IB assessment for this course. The internal assessment is an independent, student-designed project. It is marked using IBO standards and criteria and may be submitted to the IBO. In May of the second year, students will complete the external assessment which is two exams, both prepared and marked by the IBO.

Texts: *Mathematical Studies SL* Haese and Harris

College Algebra Sullivan

Understandable Statistics Brase/Brase

Statistics (Seniors)

Year Course 1 credit

Prerequisite: Successful completion of Algebra II.

This course covers topics in both statistics and probability. This course is designed to provide a study in the collection and analysis of data for application in a variety of areas including business, ecology, economics, psychology, and mathematics. Students will learn several methods for evaluating central tendency and variance in a set of data. The study of probability begins with counting methods before getting involved in the probability of compound events.

Students use permutations and combinations to determine the likelihood of many different types of events occurring. Additional topics include Bayes' theorem, the Geometric distribution, Poisson's distribution, and the standard normal distribution, as well as sampling methods, correlation and regression, and statistical testing. Student projects will focus on the use of statistics in a variety of applications. At all times throughout the course, students are expected to demonstrate both good computational skills and analytical thinking skills. Students have the option of taking the AP exam in the spring. Evaluation is based on performance on daily assignments (both in class and homework), quizzes, projects, and tests.

Text: *Understandable Statistics* Brase/Brase

Science Department

The Science Department sees several major objectives in its programs and courses. One is to prepare the students for the further study of science in college. A second goal is to make the students aware of the crucial role of science and technology in our modern world to help them to understand the impact of science on society, and to help them make wise choices in their daily lives, future educational plans and career choices.

To these ends, the department provides a balanced selection of courses that feature not only rigorous and detailed instruction, but also discussion and laboratory work. In addition to traditional classroom instruction, computers, library work and outside sources may be used. In active lab programs, the students discover on their own many of the major principles of Science and see examples and applications of the material taught in the classroom. They are also learning the principles of safe laboratory work they will need for their future study of Science. The testing program stresses not only the recall of specific facts, but also the ability to use scientific facts, principles, and procedures to analyze and solve problems, and to express ideas in a coherent, orderly manner.

The department works closely with the other departments in The Academy to insure that the students have the math and language skills they will need in their study of science, and that common subject matter is taught in a coordinated manner.

The department is constantly considering subject matter, content, and sequence of the courses to make sure that our students are receiving the best science education possible.

The minimum graduation requirement for science is a one-year course in each of the 3 major science disciplines. The recommended sequence is; Chemistry in ninth grade, Physics in tenth grade, and Biology in eleventh grade. Juniors will have the option of taking IB Biology (a 2-year course) to satisfy their biology requirement. Other IB science courses will be offered on a rotating basis if enrollment in each course is sufficient.

Chemistry

1 Year

1 credit

Pre-requisite or co-requisite: Algebra I.

This is the first course in the required sequence. The course builds on the math and science background developed in the Middle School. In many cases, this course gives a more thorough explanation of phenomena and processes that students may have previously studied.

The course covers the major topics of traditional high school chemistry such as the atomic theory of matter, the periodic table, chemical reactions, mass–mass and volume-volume relations in chemical reactions, acids and bases, and the kinetic theory of matter. The mathematical aspects of these topics are constantly stressed. The lab work consists of hands-on experiments using the major tools of the chemistry lab, and is a major part of the course work. Lab safety is stressed in all procedures. Students will usually work in pairs, and with a minimum of direction to develop their ability to work safely and independently in the lab. Class discussions, frequent quizzes and periodic tests help the students and instructor monitor understanding and progress.

Text: *Modern Chemistry*

Davis, Frey, et.al.,
(Holt, Reinhart, & Winston)

Physics

1 Year

1 credit

The second course in the required science curriculum builds on and summarizes the material of the earlier science courses, giving a fuller, more complete explanation of many of the previously studied topics as well as introducing the major areas unique to this subject. As in all of the science courses taught at The Academy, the goal is to give the students an understanding of the subject, how it relates to their daily lives, and the ability and desire for further study in science.

The course covers the topics of traditional high school physics courses such as classical mechanics, forces and energy (heat, sound, light, electrical), and new discoveries and theories. Topics are introduced and learned first by studying concepts. These topics are expanded utilizing mathematical applications and explanations. In the lab work, through a variety of hands on activities, the students will discover, study, and see illustrated many of the major underlying principles of the physical sciences. Lab safety and independent work are stressed.

Text: *Conceptual Physics*

Hewitt

Biology

1 Year

1 credit

Biology (or IB Biology) is the required science course for all eleventh graders. Building on the background developed in the lower grades, the course will give the students a comprehensive background in biology, prepare the student for the future study of biology at college, help the student understand the place of humans in the living world and help the student gain an understanding of the importance of the biological sciences in everyday life.

This course will cover the major topics of high school biology such as the major life processes at a cellular and organism level, the continuation and continuity of life, the development of new life forms, the energy flow within the organism and within the ecosystem, and the interrelationships of all living things. The lab work will consist of a variety of hands-on activities using such instruments as the microscope and computer, and will relate directly to the students' class room work.

Text: *Biology*

Miller & Lavine

IB Biology HL (year 1 and year 2)

2 Years

1 credit/year

The purpose of Higher Level IB Biology is to provide motivated students with an opportunity to develop a broad understanding of the field of biology. During this two year pre-university course, students will gain the knowledge of facts and information and the ability to apply and use this body of knowledge.

The classroom instruction of scientific theory will include terminology, facts, concepts, methods, and theories intertwining the unifying themes of structure and function, universality versus diversity, equilibrium within systems, and evolution. Students will apply their knowledge of biological theory through methodical experimentation. The practice of the scientific method in these inquiry-based investigations will challenge students to collaborate and communicate effectively. They will integrate the use of technology, analytical skills, problem solving behaviors, interdisciplinary concepts, and global thinking.

Text: *Higher Level Biology*

Damon, McGonegal, Tosto and Ward

IB Chemistry SL

1 Year

1 credit

Pre-requisite: a one-year course in chemistry.

This course is the equivalent of a first-year college course in general chemistry. Students enrolled in this course are committed to taking the IB Exam in the spring. The course topics include quantitative chemistry, atomic structure and periodicity, bonding, energetics, kinetics, equilibrium, acids and bases, and oxidation and reduction. Additionally, the course includes units on organic chemistry, medicine and drugs, and food chemistry. An active laboratory program is an integral part of this course. Students will learn to plan, observe, measure, record, analyze, and report chemical data. Lab Reports will be written according to IB guideline for IB Internal Assessments. (Offered every other year alternating with IB Physics SL)

Text: *IB Chemistry (3rd ed.)*

Green and Damji

IB Physics SL

1 Year

1 credit

Pre-requisite: a one-year course in physics.

This course covers a wide variety of topics including Newtonian mechanics, thermal physics, energy and waves, electric and magnetic fields and forces, atomic and nuclear physics, and energy, power, and climate change. Additional topics that have been selected are wave phenomena and astrophysics. Students will be required to plan and report their laboratory work according to the rigorous guidelines of IB for Internal Assessments. (Offered every other year alternating with IB Chemistry)

Text: *Physics*

Kerr and Ruth

IB Physics HL (year 1 and year 2)**2 Years****1 credit/year**

This course covers all of the material included in IB Physics SL. In most cases, those topics are expanded to include more depth and challenge. In addition, HL Physics covers electromagnetic induction, quantum physics, digital technology, and relativity or particle physics. The laboratory program is similar in rigor to that of SL Physics.

Text: *Physics*

Kerr and Ruth

Environmental Science**Semester****½ credit**

With increasing population growth, the resources of the world are becoming strained, and in order to manage them successfully, it is important that future scientists, policy makers, and environmentally responsible citizens become aware of the use and abuse of natural resources. This course integrates science and policy affecting our environment. Students explore topics such as overpopulation, pollution, habitat conservation, acid rain, and the greenhouse effect. Students are encouraged to discuss topics and work together to investigate solutions. Laboratory, field study and service learning are integrated with class discussion.

Text: *Environmental Science*

Enger & Smith

Anatomy and Physiology**Semester****½ credit**

Anatomy and Physiology is a survey course of study directed through the anatomical and physiological systems of humans. The student explores the structure and function of systems and how each contributes to the complete homeostasis of the body, including integumentary, skeletal, muscular, nervous, circulatory, digestive, renal, respiratory, and reproductive. The student also participates in the examination of cells, histology, and basic chemistry as it applies to the study of physiology.

Text: *Essentials of Human Anatomy & Physiology*

Marieb

Fine and Performing Arts Department**Introduction to Watercolor Painting****Semester****½ credit**

This introductory studio course focuses on all areas of watercolor painting. Students learn about color theory and color mixing, along with composition and proper watercolor painting terminology and equipment. A wide variety of approaches and watercolor techniques are used in this course. Students have the opportunity to work with still life, landscape, and figure painting. They will be asked to maintain a portfolio, as well as to complete weekly drawing and reading assignments. All projects conclude with a group critique and discussion. In addition, students are introduced to important watercolor artists, both past and present, along with important historical content and events.

Studio Drawing

Semester

½ credit

This course is aimed toward developing the students' skills, understanding, and appreciation of drawing. Students will participate in a wide range of drawing activities, covering various techniques and visual concepts. Styles from abstract, to realist, to conceptual art will be explored. The student artists will be encouraged to experiment with a variety of drawing mediums, including pencil, charcoal, pen and ink, pastels, markers, chalk, conte crayon, etc. The students will be asked to maintain a sketchbook, along with a portfolio of their work. Group critiques and discussions encourage a better aesthetic awareness of drawing.

Representative texts may include the following:

A Guide to Drawing

Mendelowitz

Art Today

Faulkner

The Art of Drawing

Chaet

Art News

(magazine)

Art Studio

Semester

½ credit

The goal of this course is to develop and enrich student interest in the visual arts. Working in a studio atmosphere, students concentrate on projects aimed at challenging the artists to experiment and to explore. Students are asked to maintain a portfolio of their work completed both in and out of the class. Group critiques and discussions reinforce projects. Field trips and guest speakers are included when appropriate. Students have the opportunity to work with three dimensional and two dimensional areas. A chronology and a glossary of terms are created in order to provide a better understanding of important artists, events, and vocabulary. Students also gain a stronger insight into their own creative processes through maintaining a journal and a sketchbook. Assorted texts, handouts, and other reading assignments are used to supplement group discussions.

Digital Photography and Video Production

Semester

½ credit

This course introduces the artist to some of the latest technologies in photography and video imaging. Students have the opportunity to learn the art of working with a digital camera, the process of photo manipulation using the computer, scanning both two and three dimensional images and objects, along with the proper use of the video camera. This course gives students the confidence and skills that are needed to create their own portfolios of photographs (black and white, as well as color). Students also create their own multimedia slide presentations of story board layouts, and video production.

Artists learn to work on individual projects along with collaborative exercises and projects. Students also gain valuable insight into the art of working with an audio sound track and experience ways to edit and add sound to their still photos, slide presentations, multimedia presentations, and videos.

Equipment and processes include, but are not limited to:

Digital color scanner

Digital camera

Macintosh computer

Color photo retouching
Adobe Premiere Video
Adobe Photoshop

Give Me Shelter: Introduction to Architectural Processes Year 1 credit

This course will show the evolution of architectural styles through history and civilization. Students will explore the use of floor plans, renderings, perspective drawing, scale models and computer generated drawings of various architectural styles and concepts. The class will learn to work collaboratively on solving spatial design problems. Students will be challenged to develop an understanding of how buildings are built and some of the thought processes that an architect uses in creating our homes, places of business, and public spaces along with city planning. Major movements covered include Egyptian and Mesopotamia, Aegean Civilization, Classical Greek, Hellenistic Roman, Romanesque and Byzantine, Pre-Columbian, African, Indian, Islamic Architecture, Japanese and Chinese traditions, Medieval, Gothic, Renaissance, Baroque, Jacobean, Southern Colonial, Georgian, Federal, Greek Revival, Classical Revival, Wrightian, Prairie, Fantasy, International, Art Modern, Post Modern, Deconstruction and Neomodern.

Texts:

<i>American Shelter</i>	Walker
<i>The Illustrated Encyclopedia of Architects and Architecture</i>	Sharp
<i>Free Spirit in Architecture</i>	Papadakis
<i>Design of Cities</i>	Bacon

IB Visual Arts Standard Level and Higher Level

Course Description / Rationale

This course will give the students the opportunity for practice and exploration of various media and the acquisition of studio techniques and experiences. It is intended to be an introduction of basic art concepts that build up to the development of a personal artistic portfolio of work. Students will be shown ways of extending research into practical work that they create both in and out of the studio experience. The course will also be an introduction to the practice of art criticism and critical analysis. Students will gain an understanding of relating art to the world's socio-cultural and historical content.

Candidates who have completed the Higher Level (HL), Standard Level Option A (SLA) or Standard Level Option B (SLB) course will be expected to demonstrate growth and commitment through the study of art along with an interrelationship between their reach and their artistic production.

Aims

Through having artist-teacher serve as role model, students should develop their identities as artists. Various approaches will make this possible, for example, pointing out differences in students' work and using of these differences in a way to develop a personal style; offering

suggestions rather than “answers” in creative problem solving and thereby encouraging personal decision making; having the students learn to appreciate the differences in styles, and to use this understanding in viewing their work and the work of others; making students aware that ideas are self-generated and that they relate to their unique selves and experiences; and creating opportunities for exhibition and self-evaluation of student work, including their own art portfolio exhibition.

Furthermore, the course should encourage artistic commitment by encouraging students to develop a philosophy about materials so that they will work and respect and understanding for these materials; showing students how art comes from working with materials and responding to them; encouraging students to work through an idea and develop it to a conclusion; and by providing the opportunity (time, place, instruction) to continue work beyond the required scheduled art time.

Students will learn to form and defend independent judgments through instruction in the process of art criticism; activities which encourage unique and expressive use of visual forms; exposure to various works and styles of art from many different world cultures; discouraging prejudiced views of art by discussing works and artists they do not like and what causes their dislike and why work that they dislike may still be very valuable; questioning the students' creative processes and motivation regarding each decision on design (as an attempt to expose and evolve levels of individual taste); impressing upon students the importance of making crucial decisions needed to solve problems as they arise in the execution of their work; and through holding timely and regularly scheduled class critiques.

Objectives

Candidates who have completed the Higher Level (HL), Standard Level Option A (SLA) or Standard Level Option B (SLB) course will be expected to demonstrate growth and commitment through the study of art and an understanding of the interrelationship between their research and their artistic production.

In terms of studio work, candidates who have completed any of the three courses will be expected to demonstrate through purposeful exploration an inquiring and integrative approach to a variety of visual phenomena; to synthesize art concepts and skills in works that are personally, socio-culturally and aesthetically meaningful; to solve formal and technical problems encountered in studio practice; and to exhibit technical skills and an appropriate use of media.

In addition, candidates who have completed Higher Level (HL) or Standard Level Option A (SLA) courses will be expected to produce works of art with imagination and creativity through individual and, where appropriate, collaborative work.

As part of their assessment, candidates who have completed any of the three courses will be expected to demonstrate clearly in visual and written terms how personal research has led to an understanding of the topics or concepts being investigated; to analyze critically the meaning and aesthetic qualities of art forms using an informed vocabulary; to show some awareness of the cultural, historical and social dimensions of themes in more than one cultural context; and to examine the visual and functional qualities of art from their own and other cultures for meaning and significance.

Part I: Studio work—Criteria

- Purposeful Exploration
- Meaning and Function
- Formal Qualities
- Technical and Media Skills

The above to be graded on:

- Art experience
- Exposure to museums and galleries
- Meetings and interviews with practicing artists
- Portfolio development
- Leadership role displayed during class critiques

Research Workbooks—Criteria

- Independent Research
- Critical Research
- Contextual Research
- Visual Research

Workbooks will incorporate:

- Analytical research
- Discovery
- Interpretation
- Media experiments

Candidate Record Books / CRB

- Personal statement by the candidate:
The candidate should describe briefly (300 words maximum) his/her growth and development as an artist in the IBO course.
- Photographs of Studio Workbook
- Photocopies of Research Workbook pages

Assessment

Non-IB

- To be added prior to final submission

IB Internal Assessment

- Studio Work (SLB)
- The Studio Work of SLB candidates is internally assessed by the teacher. The body of work demonstrates the candidate's understanding of the relationship of media and techniques to the expression of ideas in the visual arts. The form of a Standard Level Option B candidate's Studio Work does not have to result in an exhibition.

IB External Assessment

- Studio Work (HL and SLA)
- The Exhibition: The display should include both works and final form and research work that they used in developing their art, students will be judged on the selection and presentation of their art as well as on work adding to the discussion of the exhibition.
- Assessment of the Quality of Work will include technical characteristics; complexity; the nature of the image and process of its development; the scale of the pieces; combinations of media chosen and the time available at each level, and the available Exhibition Space. Also included is the Discussion of Studio Work (30 minutes)

Texts:

Art Today Faulkner

The Art Book

Art of the 20th Century

Themes and Foundations of Art

Ziefeld, Smagula

(Holt, Rinehart and Wilson Publishers)

Phaidon Press Inc.

Jean Louis FerrierChene

(Hachette Publishers)

Katz, Lankford, Plank National Textbook

Media

- Art News Magazine
- Architectural Digest Magazine
- Art Forum Magazine
- New York Times

Materials/Equipment

- Additional art bins for short and long term storage of student art
- Student resource workbooks
- Student portfolios
- Updated art reference books that explore more global issues and cultures
- Fee for judges

Teaching Time

Higher Level 240 hours

This course is designed for the specialist arts student, with creative and imaginative abilities, who may pursue the visual arts at university or college level.

Part A Studio Work 168 hours

Practical exploration and artistic production

Part B Research Workbooks (RWBs) 72 hours

This course meets 8 periods per 6-day cycle (29 cycles per year) for a maximum 2-year total of 308 hours.

Standard Level 150 hours

Option A (SLA)

This course is designed for the visual arts student with creative and imaginative abilities.

Part A Studio Work 105 hours
Practical exploration and artistic production

Part B Research Workbooks (RWBs) 45 hours

Option B (SLB)

This course is designed for the student whose interest in art is mainly critical, cultural and historical.

Part A Studio Work 45 hours
Practical exploration and artistic production

Part B Research Workbooks (RWBs) 105 hours
This course meets 6 periods per 6-day cycle (29 cycles per year) for a maximum 2-year total of 232 hours.

Performing Arts

IB Music SL or HL Year 1	Year	1 credit
IB Music SL or HL Year 2	Year	1 credit

Prerequisites: Film Scoring, and participation in at least one Academy music ensemble (Concert Band, Orchestra or Chorus).

IB Music is a study of music that fosters curiosity and openness to both familiar and unfamiliar musical worlds. Through such a study of music we learn to hear relationships of pitch in sound, pattern in rhythm and explore the similarities, differences and links in music from within our own culture and that of others across time. Students will explore in greater detail multiple aspects of a work and seek the components that create a musical style. Students will complete a musical links investigation which will demonstrate a wider understanding of music in relation to time, place and cultures.

SL (standard level) students in IB Music are required to choose one of the three options:

- SL creating (SLC) – required to present two compositions
- SL solo performing (SLS) – required to present a 15 minute public recital
- SL group performing (SLG) – performance with an Academy ensemble

HL (higher level) students in IB Music are required to present all 3 of the SL categories, creating, solo performing and group performing.

*Private study on an instrument/voice is strongly recommended.

- HL creating (HLC) – required to present three compositions
- HL solo performing (HLS) – required to present a 20 minute public recital
- HL group performing (HLG) – performance with an Academy ensemble

*Private study on an instrument or voice is strongly recommended.

Film Scoring **Year** **1 credit**

Learn how movie film magic is made through the hands-on process of writing music cues for short films. This course teaches the music theory needed to write successfully, as well as the technology of using score-writing software to link music notation with film. Students will complete short projects, assignments and tests that build universal skills in music and technology, and reveal how movie magic can be made. This course is a Pre-requisite for the International Baccalaureate Music course offered to 11th and 12th grade students.

Stagecraft **Year** **1 credit**

Stagecraft is a survey of Technical theater skills and technology needed for production. Students will learn rudiments of scenic, property, costume, makeup, sound, lighting and graphic design. Using the US school musical and MS musical as a laboratory, students will have the hands-on experience of taking a production from conception through to reality using skills learned and introduced in this course. Achievement and evaluation will take place through group projects and individual assignments. Students enrolled in Stagecraft are still eligible to audition and act as part of the school productions.

Concert Band **Semester (Fall & Spring)** **1/4 credit per semester**

Concert Band is an ensemble for woodwind, brass, and percussion players who wish to advance their skills and knowledge in the area of instrumental music performance. The class will explore a variety of band literature ranging from Renaissance to modern including rock, Latin and swing. Evaluation is based on attendance, participation and performance.

Chamber Choir (Auditioned Gr. 6 – 12) **Semester (Fall & Spring)** **1/4 credit/semester**

Chamber Choir is a class for students interested in developing their skill and knowledge in the area of vocal music. The group will rehearse and perform music in a variety of styles in order to develop a high level of proficiency in part singing. Evaluation is based on attendance, participation, and performance.

Orchestra **Semester (Fall & Spring)** **1/4 credit per semester**

Orchestra is a select class for string players who wish to perform advanced orchestral music. The group will explore the specific skills and styles of string music literature and advance the artistry and knowledge of the individual musician. Grades will be determined on the basis of attendance, participation, and performance.

Piano Ensemble **Semester** **1/4 credit per semester**

Piano Ensemble is a course for developing pianists to hone their craft and develop basic ensemble skills needed to perform with fellow musicians. The ensemble uses music from standard repertoire, video game themes, and film and television themes to help students refine and develop their rhythm, tempos, notes, and expression to form an effective performance. Students are expected to be taking private piano lessons in addition to this ensemble. Grades are determined based upon preparation, attendance and performance.

Technology & Computer Science Department

As of 2009-2010, there is no longer a required Computer Science course requirement for graduation. This requirement was replaced with an optional, full-credit track that permits a student to take Computer Science as an elective in all four years of the Upper School. The full-track elective sequence progresses as follows:

- Grade 9 – Advanced Computer Science
- Grade 10 – Multimedia Technologies
- Grade 11 – IB Computer Science HL (year 1)
IB ITGS SL
- Grade 12 – IB Computer Science HL (year 2)
IB ITGS SL (year 2 only if needed)

Advanced Computer Science (optional) Year 1 credit

In this survey course students will be introduced to many aspects of computer science. Focusing on some of the major aspects students will progress through 7 – 8 modules each focusing on a different aspect of computer science. Each of these modules will contain some type of project based learning activity, an ethics section, a job investigation, and also a “how this affects me” section. Computer efficiency, robotics, game design, programming, digital design, computer diagnostic and repair, computer nomenclature, and 3D modeling are some of the topics which may be covered. Again these modules are based off of trending technologies and could change from year to year.

Game Design and Development (optional) Year 1 credit

In the US, video games are a \$10 billion/year industry, employing over 45,000 people at wages averaging close to \$80,000/year. The industry only continues to grow, and no end is in sight.

This course introduces students to the game design, graphic design, and computer programming aspects of game creation through the creation of art, music, and sound assets for a video game, as well as the programming of gameplay mechanics and devices. We begin with the initial planning, deciding the type of game to create, the story, game mechanics, art style, and platform. During this planning process, we discover limitations and constraints we have to accommodate for, or overcome, and adjust our plans accordingly.

After we have a plan, we begin prototype work, developing pieces of the game. Students will learn portions of Photoshop, Illustrator, and Fireworks for the purpose of art creation. (Non-artistic students need not worry; just take a look at Minecraft.) Adobe Soundbooth will be used for recording and creating sound effects. Music creation may be covered if time permits. Finally, game source code will be written in either Java or Visual C#, using a custom game engine.

Each student will create his or her own assets, and will write their own code. Periodically, the instructor will integrate the best elements from each student into a single, collaboratively built game. When complete, the game will be made available for download.

Technically speaking, games are little more than interactive computer simulations, and as such, concepts and skills learned in class are easily applied to countless other industries, especially engineering and the natural sciences. Students will learn how to simulate physics, learn some basic trigonometry, advanced algebra, and gain some creative problem solving and logic skills.

Learning Outcomes:

- Creative brainstorming
- Creative problem solving
- Long term planning
- Graphics asset creation using Adobe products
- Animation processes
- Audio asset recording creation using Adobe Soundbooth
- Game design
- Computer programming
- Technical writing

Essential Question: How can video game design and development teach critical and in-demand technology skills, and how well can it do so?

IB Computer Science HL

2 Years

1 credit/year

This is an advanced course utilizing the Java programming language, which is popular among web page developers. Students taking this course will be required to write many programs, including a comprehensive Case Study. Students will focus on these areas:

- Develop and select appropriate algorithms and data structures to solve problems.
- Code fluently in a well-structured fashion.
- Design and implement effective computer-based solutions.
- Read and understand a large program and a description of the design and development process leading to such a program.
- Identify major hardware and software components of a computer system, their relationship to one another, and the roles of these components within the system.
- Recognize the ethical and social implications of computer use.

This course runs for two years, with the second year in Grade 12. Students must do internal assessments and take the IB or AP exam in May.

Robotics

Year

1 credit

Robots often perform tasks that are too dull, too dirty, or too dangerous for humans. Robots entertain us, clean our houses, mow our lawns, build our cars, fight our wars, perform surgery on our bodies, dive to the bottoms of the deepest oceans on our planet, and visit distant planets in our galaxy. This course introduces the fundamental concepts of robotics. Some of the basic concepts to be discussed include, sensors, path planning, mechanical advantage, feedback and feed-forward control, stressing the importance of integrating sensors, and effectors and control.

Students will work in teams to build and test increasingly more complex LEGO and/or VEX based robots. No previous computer programming or electronics experience is necessary to be successful in this course.

Enrichment Courses

College Prep (Juniors required)

Semester

¼ credit

Students will review information about colleges and the college search process, create a computerized personal record and college search lists, and work on applications and essays. Students will receive a note-binder containing sections on Academy Policies for transcripts, recommendations, and mailing of applications; standardized tests (SAT, ACT) and when each should be taken; comparison of colleges according to selectivity and other criteria; information to be used for the counselor recommendation; and financial aid materials including a calendar and glossary of financial aid terms. Parents are urged to attend College Night in the fall and the College Fair in the spring. In addition, each student must experience a practice interview and attend workshops in interview techniques and college essay writing, often during the 4th quarter. All of the information and material generated during this course will be of use in the mandatory, individual Family College Conference which takes place in April or May.

10th Grade Health (Sophomores required)

Semester

½ credit

Students participate one full year of Health study. Students will study drug and alcohol abuse, and learn about various communicable and non-communicable diseases. A major project will take the students outside the classroom and into the community to become more aware of the needs in our communities. Students deliver an individual presentation about the agency they visited. The other quarter focuses on the individual students' health and well-being. The topics of habits, stress, nutrition, social skills and decision making are explored. In addition, students take stock of their current health habits.

Text: *From Binge to Blackout*

Chris Volkmann
Toren Volkmann

Extended Essay (IB FDC - Required)

The extended essay is an in-depth study of a focused topic chosen from the list of approved Diploma Program subjects—normally one of the student's six chosen subjects for the IB diploma. It is intended to promote high-level research and writing skills, intellectual discovery and creativity. It provides students with an opportunity to engage in personal research in a topic of their own choice, under the guidance of a supervisor (a teacher in the school). This leads to a major piece of formally presented, structured writing, in which ideas and findings are communicated in a reasoned and coherent manner, appropriate to the subject chosen. It is recommended that completion of the written essay is followed by a short, concluding interview, or viva voce, with the supervisor.

The extended essay is assessed against common criteria, interpreted in ways appropriate to each subject. The extended essay is:

- compulsory for all Diploma Programme students
- externally assessed and, in combination with the grade for theory of knowledge, contributes up to three points to the total score for the IB diploma
- a piece of independent research/investigation on a topic chosen by the student in cooperation with a supervisor in the school
- chosen from the list of approved Diploma Programme subjects, published in the Vade Mecum
- presented as a formal piece of scholarship containing no more than 4,000 words
- the result of approximately 40 hours of work by the student
- concluded with a short interview, or viva voce, with the supervising teacher (recommended).

In the Diploma Program, the extended essay is the prime example of a piece of work where the student has the opportunity to show knowledge, understanding and enthusiasm about a topic of his or her choice. In those countries where it is the norm for interviews to be required prior to acceptance for employment or for a place at university, the extended essay has often proved to be a valuable stimulus for discussion.

Physical Education

Year

Pass/Fail

Upper school Physical Education (Grades 9-12) will continue to allow for the refinement of complex skills, mature motor patterns, and selected isolated manipulative skills. Students will perform variations of skills and combinations in increasingly dynamic and complex environments that encompass a variety of lifetime sports activities. . Students will continue to use teacher feedback to improve skills, and work with peers in cooperative settings.

Students will identify the purposes for and follow activity-specific safe practices, rules, procedures, and etiquette. They continue to develop cooperative interpersonal skills to enable completion of a common goal while working with a partner or in small groups and teams. Team and lifetime sports activities will be the major emphasis of this course. Most students will have PE two days out of a seven day cycle.

Senior Internship (required) – see page 2

Senior Speech (required) – also see page 3

Pass/Fail

The goal of this course is for students to experience and to gain confidence in speaking in public. This course devotes its time both to the fundamentals of speaking (appearance, gesticulation, emotion, rhythm, volume, tone, eye contact, etc.) and to the preparation of each student's senior Speech. The speech, a requirement for graduation, is 3 to 5 minutes in length and is given at an Upper School Morning Meeting. At this time, each senior may address almost any issue of interest. Speeches are videotaped.

Newspaper

The newspaper staff produces The Harrisburg Academy student newspaper, the *Insider*. Meetings consist of brainstorming story ideas, reporting, writing, editing, and laying out the

newspaper. Students occasionally use class time to interview, make phone calls, or take photographs. Currently, The Harrisburg Academy *Insider* aims for five issues per year, including a satirical “April fool’s” issue. Students interested in desktop publishing also have the chance to learn the PageMaker program, on which the *Insider* is composed. Participation in this organization offers students opportunities to cultivate leadership, organization, creativity and leadership skills.

Yearbook

This course meets three times per cycle. An Advisor recommendation is necessary to join the staff. Criteria include interest, compatibility of schedules, talent, and demonstrated ability in the skills associated with producing the yearbook. The primary goal of the course is to prepare the current year’s edition of the Spectator for publication. In doing so, students will gain experience in computer software specific to yearbook production, layout techniques and publishing terminology. Each student is assigned at least one area of major responsibility and is expected to be timely in the completion of deadlines and produce pages of quality. Once the yearbook has been sent to press, the staff focuses on preparations for the next year’s book. There is a fourth quarter project in which students demonstrate the skills they have learned throughout the year.