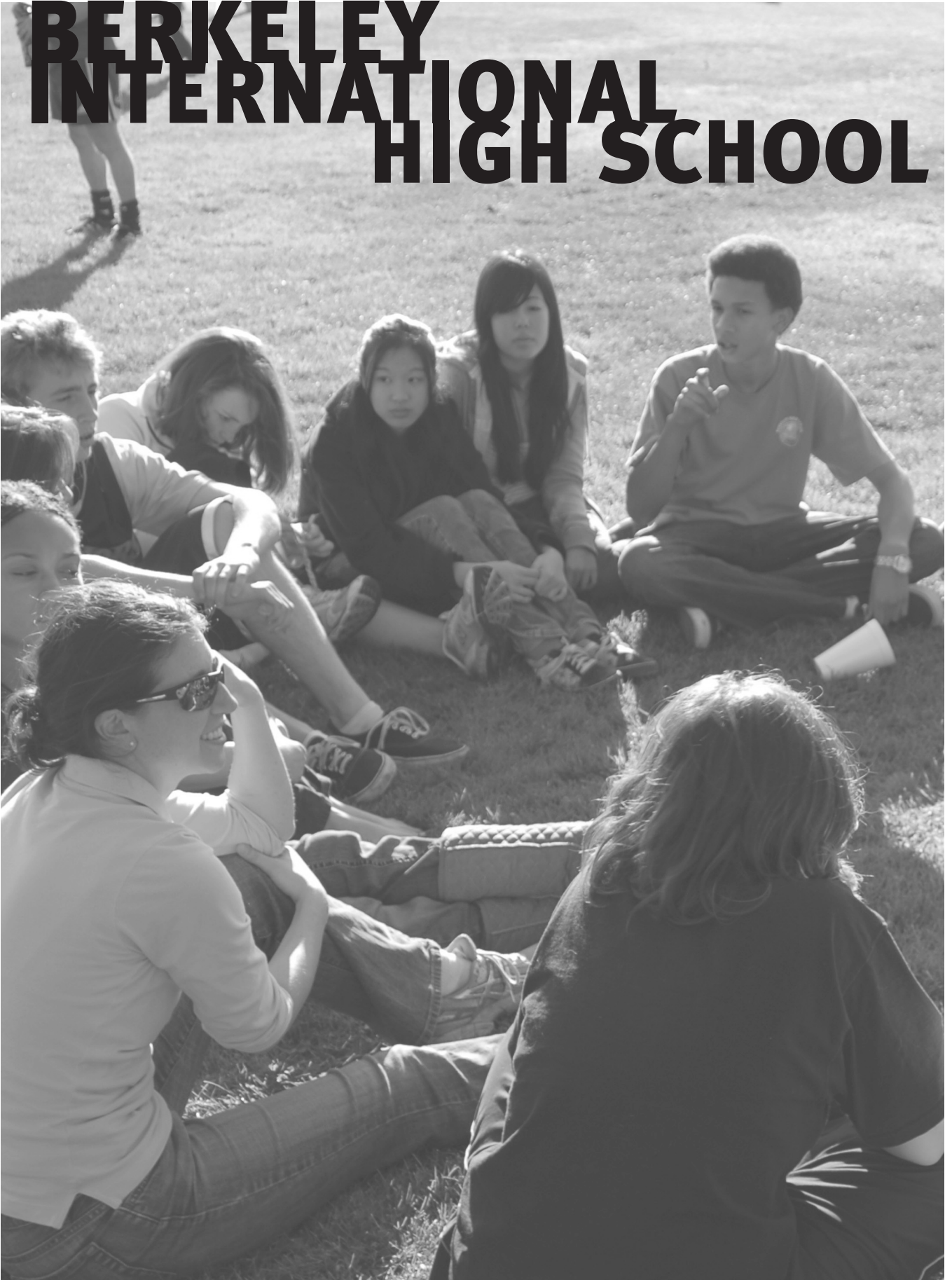


# BERKELEY INTERNATIONAL HIGH SCHOOL



# BIHS Course Progressions

	9th	10th	11th	12th
<b>A</b>	Global Studies*	Global History	History of the Americas (HL1)*	History of the Americas (HL2)*
<b>B</b>	Freshmen Lit &Composition	Global Literature	English IB HL (HL1)	English IB (HL2)
<b>C</b>	Algebra 1	Geometry	Algebra 2	Mathematical Studies IB (SL)
	Geometry	Algebra 2	IB Math Year 1	Mathematics IB (SL)
	Honors Geometry	Honors Algebra 2	Mathematics IB (HL1)	Mathematics IB (HL2)
<b>D</b>	Advanced Biology	Chemistry	Chemistry IB (SL) Biology IB (SL) Environmental Science (AP) Anatomy and Physiology (H) Physics (P)	Chemistry IB (SL) Biology IB (SL) Environmental Science AP Environmental Science (AP) Anatomy and Physiology (H) Physics (P) Biotech 3/4 (ROP) Physics IB (HL2)
<b>E</b>	Spanish 1/2	Spanish 3/4	Spanish 5/6	Spanish IB(SL)
	Spanish 3/4	Spanish 5/6	Spanish 7/8 IB (SL)	Spanish IB (HL)
	Spanish 5/6	Spanish 7/8	Spanish IB (SL)	Spanish IB (HL)
		Spanish 7/8	Spanish IB (SL)	Spanish IB (HL)
	Spanish for Native Speakers 1/2	Spanish for Native Speakers 3/4	Spanish IB (SL)	Spanish IB (HL)
	Latin 1/2	Latin 3/4	Latin 5 (P)/6 (AP)	Latin IB (HL)
	Kiswahili 1/2	Kiswahili 3/4	Kiswahili 5/6	Kiswahili IB (SL)
	French 1/2	French 3/4	French 5/6	French IB (SL)
	French 3/4	French 5/6	French IB (SL)	French IB (HL)
	French 3/4	French 5/6	French IB (SL)	French IB (HL)
	Mandarin 1/2	Mandarin 3/4	Mandarin 5/6	Mandarin IB (SL)
<b>F</b>	<b>9th</b>	<b>11th or 12th grade</b>		
	<b>Visual Arts</b>	Creative Arts	IB Studio Art (SL)	Visual Arts IB (HL)
		Drawing Advanced Drawing and Painting Ceramics Advanced Ceramics Computer Art Art Design and Orientation AP Art History (AP) AP Studio Art (AP) Creative Arts 3/4 Photography Advanced Photography Advanced Photography (ROP)		
	<b>Performing Arts</b>	Jazz Lab Jazz Ensemble Dramatic Arts/Acting Workshop Afro-Haitian Beginning Dance Beginning Modern/Jazz Dance* Chorus Concert Band	Jazz Ensemble Production/Acting Advanced Theater Projects (H) Afro-Haitian Advanced Dance Adv. Dance/Dance Projects* Dance Production/Choreographers* Music Theory (SL) Music Theory (HL) Chamber Orchestra AP Music Theory Music Composition IB (HL)	
<b>G</b>		Comparative Values & Beliefs/Economics*	IB Economics (SL)	IB Economics (SL)
<p><i>Additional "g" electives are listed in African-American Studies, Technology and Elective Courses. Please see those sections for descriptions.</i></p>				
<b>BIHS</b>	Creative, Action, and Service begins after spring semester sophomore year			Extended essay begins spring junior year
			Theory of Knowledge	Senior Project

\* Courses with asterisks meets additional BHS graduation requirements (see course descriptions).

# Berkeley International High School

Berkeley International High School (BIHS) is a small learning community within Berkeley High School, focusing on international studies for grades nine through twelve. The overarching goals of BIHS are to offer insights into the nature of international education and to build students' sense of identity and cultural awareness, fostering a spirit of discovery and enjoyment of learning for all BIHS students.

BIHS, an authorized International Baccalaureate school, prepares all students for the option to participate in the IB Diploma Programme, an internationally recognized curriculum in 11th and 12th grade. During the course of the four years, students in BIHS develop strong relationships with their teachers who help to build students' sense of identity and cultural awareness. The integrated 4-year study of humanities focuses on the study of geographical regions and elements of culture including literature, art, history, economics and beliefs. It then progresses through the study of nations and the dynamics of global relationships, building in complexity each year. Balancing the richness of Berkeley High School's elective options with the value and challenge of the IB curriculum, BIHS creates a supportive community where diversity of perspective is valued and encouraged. With an emphasis on student centered learning, including cooperative groups and classroom presentations, BIHS students develop strong speaking and leadership skills. They also develop the ability to bring perspective to conversation and participate confidently with people of all backgrounds in our increasingly complex world.

To create a more personalized experience we split the program into two smaller "houses" which allows teachers and students to work in a cohesive manner. In 9th and 10th grade students take two or three of their classes with the same core of students to provide community and support.

## IB Learner Profile

As an International Baccalaureate school BIHS develops internationally minded people who, recognizing their common humanity strive to create a better and more peaceful world.

### IB learners strive to be:

#### INQUIRERS

They develop their natural curiosity. They acquire the skills necessary to conduct inquiry and research and show independence in learning. They actively enjoy learning and this love of learning will be sustained throughout their lives.

#### KNOWLEDGEABLE

They explore concepts, ideas and issues that have local and global significance. In so doing, they acquire in-depth knowledge and develop understanding across a broad and balanced range of disciplines.

#### THINKERS

They exercise initiative in applying thinking skills critically and creatively to recognize and approach complex problems, and make reasoned, ethical decisions.

#### COMMUNICATORS

They understand and express ideas and information confidently and creatively in more than one language and in a variety of modes of communication. They work effectively and willingly in collaboration with others.

#### PRINCIPLED

They act with integrity and honesty, with a strong sense of fairness, justice and respect for the dignity of the individual, groups and communities. They take responsibility for their own actions and the consequences that accompany them.

**OPEN-MINDED**

They understand and appreciate their own cultures and personal histories, and are open to the perspectives, values and traditions of other individuals and communities. They are accustomed to seeking and evaluating a range of points of view, and are willing to grow from the experience.

**CARING**

They show empathy, compassion and respect towards the needs and feelings of others. They have a personal commitment to service, and act to make a positive difference to the lives of others and to the environment.

**RISK-TAKERS**

They approach unfamiliar situations and uncertainty with courage and forethought, and have the independence of spirit to explore new roles, ideas and strategies. They are brave and articulate in defending their beliefs.

**BALANCED**

They understand the importance of intellectual, physical and emotional balance to achieve personal well-being for themselves and others.

**REFLECTIVE**

They give thoughtful consideration to their own learning and experience. They are able to assess and understand their strengths and limitations in order to support their learning and personal development.

**Advisory Statement**

Beginning in the 2010-2011 school year, all BIHS students will have an assigned faculty member as their advisor. This advisor will be one of their academic teachers and will serve as the primary point person in helping to communicate with that student and check in about academics. Advisory curriculum, including community building, habits of successful students, ways to access support, developing leadership skills, and information on the college application process and career options will be covered within BIHS core classes throughout the four years of high school.

**The Curriculum****Freshman Year**

In ninth grade, BIHS students take Global Studies, Freshman Literature & Composition, Advanced Biology, math and either Creative Arts or a performing art. Students can also choose to take a world language or PE. English, history and science teachers plan collaboratively together in order to integrate these classes. The English and history courses are closely connect and follow a geographical “regions” approach.

**Sophomore Year**

In tenth grade, BIHS students take Global Literature, Global History, and a semester of Comparative Values and Belief Systems, and a semester of Comparative Political and Economic Systems. Students also take math, chemistry and are encouraged to take a world language. These courses focus on research skills and prepare students for the more rigorous classes they will encounter in their Junior and Senior years.

**Junior and Senior Years**

In the eleventh and twelfth grades all students take IB higher level courses in History year 1 and year 2 and English year 1 and year 2. In twelfth grade students also take Theory of Knowledge, an interdisciplinary class that explores the nature of knowledge and information across multiple subjects.

In addition to the core classes in the Junior and Senior years, BIHS students complete two other unique elements allowing them to broaden learning experiences outside of the classroom. Each student in BIHS writes an essay on a topic of his or her choice beginning in their junior year and culminating in the senior year (see Extended Essay in the Senior Course Section). Students also complete the Creativity, Action, Service (IBCAS) component beginning during the summer after sophomore year and complete it in the senior year (see IBCAS in the CAS Course Section).

**SENIOR PROJECT**

In the fourth quarter of the TOK class, all BIHS students will create a senior project that shows

relection of their IB academic work, Extended Essay, Creative, Action, and Service hours, and overall growth throughout high school. Students will present their project in a creative way to a panel of peers, teachers, and other guests in May or June of senior year.

### **INTERNATIONAL BACCALAUREATE DIPLOMA**

BIHS students may choose to meet the requirements for the International Baccalaureate diploma. The IB Diploma is an internationally recognized achievement which may earn students up to a year's worth of credit at certain colleges. Aside from completing the standard BIHS graduation requirements of the Extended Essay, IBCAS, and the Theory of Knowledge course, students who choose to pursue the diploma need to complete end of the year exams in six different subject areas, (English, history, math, science, world language, and an elective). A minimum of three exams and a maximum of four exams will be taken at the higher level, leaving two to three exams to be taken at the standard level. Two standard level exams may be taken in the junior year and all higher level exams are taken in the senior year. Students may choose to take a second language, a second science, IB economics, IB music or IB visual arts as their elective option. Alternatively, students can choose to earn an IB certificate for college credit in any of the IB courses offered at Berkeley High School.

## **Freshman Year Courses**

### **GLOBAL STUDIES (P)**

YEAR • 10 CREDITS

This course introduces students to the concept of “global community,” through the study of five realms of the world: North Africa/Southwest Asia, Sub-Saharan Africa, Latin America, South Asia, and East Asia. Global Studies enriches students’ understanding of the physical environment, history, culture, and current political/environmental issues of people in different areas of the world through rigorous and engaging lessons presented through a variety of media. The core question that drives Global Studies is “How do different members of the global community experience geography and culture, and how am I connected to them?”

### **ENGLISH 1 (P)**

YEAR • 10 CREDITS

#### **FRESHMAN LITERATURE & COMPOSITION**

Through the study of literature, students examine important issues in cultures at home and across the globe, read a variety of genres — poems, plays, short stories, and novels — and write in a variety of modes (narrative, descriptive, expository, analytical, argumentative). They explore the meanings of what they have read and articulate their understanding of culture. The core question is “How do humans explore their world through stories?” The study of literature follows the regional approach of the Global Studies course and is aligned with the California State Standards of Reading, Writing, Speaking, and Listening.

### **Art Options**

All freshmen in BIHS must take an art class. They can choose between Creative Arts as their visual arts or choose a performing art class for their performing art course instead.

### **CREATIVE ARTS (P)**

YEAR • 10 CREDITS

Creative Arts studies artistic expression and art history from a global perspective and follows the regional approach of the Global Studies course. Students study a broad array of art techniques and materials, including drawing and print-making. In this course they learn to analyze and evaluate art work and art historical periods in terms of aesthetic theories and cultural context. The core question addressed is “How has art shaped the world?” There is a \$20 materials fee.

### **DRAMATIC ARTS/**

#### **ACTING WORKSHOP (P)**

YEAR • 10 CREDITS

**DRAMATIC ARTS** (Beginning Drama), introduces students to the fundamentals of theatrical production. Students learn the basic elements and vocabulary of the theater as well as how to use these tools to create informal and formal pieces of theater, from improvisations to short one-act plays. In addition to performance, students grasp how theater came to be and understand it in its cultural context through field trips to professional productions and class reading and writing projects. Students learn the rudiments of how to gauge the aesthetic value of different theatrical experiences as well as how principles of theater can be used and applied to problem

solving in other contexts. Students learn that the organizational, leadership, analytical and time-management skills of the theater can also be utilized in other disciplines and professions. Dramatic Arts is designed to acquaint students with various aspects of theatre: acting, costuming, make-up, speech, lighting, directing, and scene design. Primary stress is on the language skills of listening and speaking through reading and interpretation of dramatic literature and evaluating performances. Emphasis is on acting, scene study, and character development. A secondary emphasis is placed on writing. Students prepare in-class performances. This course fulfills UC/CSU Visual and Performing Arts (f) requirement.

**ACTING WORKSHOP:** Through movement, voice exercises, theatre games, and scene study, students develop the tools they need for building competent stage performance. Class members perform improvisation and/or short formal scenes before invited audiences. Advanced students have the opportunity to direct one act plays for Production/Acting performances. **PREREQUISITE:** Satisfactory completion of Drama or Teacher recommendation. This course fulfills UC/CSU Visual and Performing Arts (f) requirement.

**BEGINNING MODERN/JAZZ DANCE (P)** YEAR · 10 CREDITS

This course introduces students to the specific dance techniques of famous choreographers from the Modern/Jazz movement in American dance, beginning in the early 20th Century. Students study the influential styles of Isadora Duncan, Martha Graham, Alvin Ailey, Merce Cunningham and contemporary choreographers. Daily practice includes technical training; improvisation and creative composition; informal performances of solo/group choreography. This course may be taken as P.E. or Performing Arts credit. This course fulfills UC/CSU Visual and Performing Arts (f) requirement.

**AFRO-HAITIAN BEGINNING DANCE (P)** YEAR · 10 CREDITS

As one of the courses of the African American Studies Program, the objective of this course is to present means which can understand African and African-derived cultures through direct experience in the education of music and dance and its relationship to and influence on contemporary dance. While providing historical structure, technique and

discipline, students are exposed to a wide variety of dance styles and are provided with an alternative learning atmosphere, which is beneficial physically, mentally and spiritually. Open to both males and females. This class fulfills UC/CSU Performing Arts (f) requirement. (PE credit)

**CONCERT BAND (P)**

YEAR · 10 CREDITS

Wind and percussion players build spirited musical repertoire for performances at athletic and community events. The fall semester will emphasize musical performance at athletic events. The spring semester will emphasize symphonic band repertoire. **PREREQUISITE:** Fundamental skill level on wind or percussion instruments.

**CHORUS (P-PENDING)**

YEAR · 10 CREDITS

This class emphasizes the fundamentals of vocal technique and performances of a varied repertoire of choral music. The class typically performs Broadway, rock, gospel, soul and art music. Students also have the opportunity to perform as soloists and small groups. The chorus performs in two concerts each year (one fall, one spring) plus a regional choral festival, also in the spring. Students do not need to read music in order to enter the class; they will learn to read as the class progresses.

**JAZZ LAB BAND (P)**

YEAR · 10 CREDITS

Students acquire knowledge of combo and big band instrumental techniques and styles. Second semester students will continue in their study of combo and big band instrumental techniques and style. **PREREQUISITE:** Fundamental skill level on a musical instrument. This course fulfills UC/CSU Visual and Performing Arts (f) requirement.

**JAZZ ENSEMBLE (P)**

YEAR · 10 CREDITS

Style and content of the jazz idiom studied; modern and traditional jazz compositions rehearsed and performed. **PREREQUISITE:** Proficiency in sight-reading required; Audition and Teacher consent. Enrollment limited. This course fulfills UC/CSU Visual and Performing Arts (f) requirement.

**Math Options**

**ALGEBRA 1 (P)**

YEAR · 10 CREDITS

Two semesters of college-prep Algebra, designed to acquaint students with both theory and applications (practical problems). Equation-solving, graphing, proportional reasoning, probability, factoring,

and modeling are major components of this course. Students are expected to use a scientific calculator.

**GEOMETRY (P)** YEAR • 10 CREDITS

This is a course in plane and solid geometry. Topics include perimeter, area, graphing of linear equations, slope, proofs, problem-solving, spatial visualization, volume and surface area of polyhedra and other solids, congruence of triangles, perpendicular and parallel lines, trigonometric ratios, similar figures, geometric probability, and circles. **PREREQUISITE:** “C” or proficient in Algebra 1 (P).

**HONORS GEOMETRY (H)** YEAR • 10 CREDITS

This is a course in plane and solid geometry in which methods of direct and indirect proof plays a major role. Topics include parallel and perpendicular lines and planes, similar and congruent figures, area and volume, coordinate geometry, trigonometry with right angles, construction of loci, and transformations. This is an accelerated course that rigorously covers all of the material covered in Geometry and additional topics. UC/CSU Honors credit is NOT available for this course. **PREREQUISITE:** Placement in Honors courses is based on 8th grade 1st semester and 3rd quarter grades, and the BUSD Algebra 1 3rd Quarter Assessment.

## Science Options

**ADVANCED BIOLOGY (P)** YEAR • 10 CREDITS

This course considers the basic concepts of biology from an experimental and biochemical viewpoint. Topics include the origin of life, unity and diversity of life, bio-energetics (cell respiration, photosynthesis, enzyme functions) genetics, evolution, anatomy and physiology, and ecology. Emphasis is placed on understanding science and its role in society. Experimentation is stressed. Fulfills UC/CSU (d) requirement.

## Sophomore Year Courses

**GLOBAL STUDIES (P)** YEAR • 10 CREDITS

This course covers major themes in modern world history, including the industrial revolution, imperialism, rise of Communism, and the World Wars. Emphasis is placed on the interaction between the realms studied in the freshman year and Europe. There is a focus on building historical writing and research skills. This course is thematically and

regionally integrated with the Global Literature and Comparative Values/Comparative Economics courses. The course meets the California State Standards for tenth grade Modern World History.

**WORLD LITERATURE (P)** YEAR • 10 CREDITS

**GLOBAL LITERATURE**

Global Literature is a study of literature, composition, and the humanities. The literature studied in this course is representative of the heritage of the cultures covered in Global History and Comparative Values and Beliefs. Literature includes non-Western canonical works in translation, written prior to the 20th century, paired with thematically-related contemporary pieces written in English. Genres include novels, plays, poetry, and non-fiction.

**COMPARATIVE RELIGIOUS STUDIES (P)** SEMESTER • 5 CREDITS

**COMPARATIVE VALUES AND BELIEF SYSTEMS**

The Values and Beliefs class focuses on comparing world religion and philosophy. Students examine similarities as well as the obvious differences existing from one culture to another as they appear in creative forms. They look at changes in religion over the centuries, geographies of religions, the nature of sects and cults, and the use of religion to wage war and to make peace. This course utilizes religious texts such as the I Ching, Bible, Koran, Upanishads, and Talmud to gain deeper understanding of the content.

**ECONOMICS (P)** SEMESTER • 5 CREDITS

**COMPARATIVE POLITICAL & ECONOMIC SYSTEMS**

In Comparative Political and Economic Systems students analyze a variety of current issues in the global economy, ranging from the debate over free trade and global interdependence, to competing development models for the world’s poorer nations, to the impact of population and economic growth on social, political and ecological systems. In this course students learn to identify, analyze, and to evaluate theories, concepts, and arguments pertaining to the nature and activities of individuals and societies as they relate to the varieties of economic environments that people inhabit.

## Math Options

### GEOMETRY (P)

YEAR • 10 CREDITS

This is a course in plane and solid geometry. Topics include perimeter, area, graphing of linear equations, slope, proofs, problem-solving, spatial visualization, volume and surface area of polyhedra and other solids, congruence of triangles, perpendicular and parallel lines, trigonometric ratios, similar figures, geometric probability, and circles. **PREREQUISITE:** “C” or better in Algebra 1 (P).

### HONORS GEOMETRY (H)

YEAR • 10 CREDITS

This is a course in plane and solid geometry in which methods of direct and indirect proof plays a major role. Topics include parallel and perpendicular lines and planes, similar and congruent figures, area and volume, coordinate geometry, trigonometry with right angles, construction of loci, and transformations. This is an accelerated course that rigorously covers all of the material covered in Geometry and additional topics. UC/CSU Honors credit is NOT available for this course. **PREREQUISITE:** Placement in Honors courses is based on 8th grade 1st semester and 3rd quarter grades, and the BUSD Algebra 1 3rd Quarter Assessment.

### ALGEBRA 2 (P)

YEAR • 10 CREDITS

Topics include linear, quadratic, exponential, logarithmic equations, matrices modeling, functions, graphing, complex numbers, counting and probability. A graphing calculator is required. The recommended models are Texas Instruments’ TI 83+, TI 84, TI 86, and TI 89. **PREREQUISITE:** A grade of “C” or better in Geometry.

### ALGEBRA 2 (H)

YEAR • 10 CREDITS

This is an accelerated course that covers all of the material in Algebra 2 with more rigor and includes more of the theory and more depth for the topics covered in Algebra 2. UC Honors credit is NOT available for this course. A graphing calculator is required. The recommended models are Texas Instruments’ TI 83+, TI 84, TI 86, and TI 89. **UC/PREREQUISITE:** A grade of “B” or better in Honors Geometry, or teacher recommendation and placement test.

## Science Options

### CHEMISTRY (P)

YEAR • 10 CREDITS

This course considers information necessary for a basic understanding of the chemical behavior of matter. Such topics as atomic-molecular theory weight relations, the mole concept, the behavior of gases, solutions, the structure of matter, equilibrium, acid-base theory, oxidation-reduction reactions and chemical bonding are covered. Experimentation is stressed and is used to allow students to discover principles for themselves. The first and second semester must be taken in sequence. This course fulfills UC/CSU Laboratory Science (d) requirement.

## Junior and Senior Year Courses

### HUMANITIES: HISTORY OF

#### THE AMERICAS IB (HL)

YEAR • 10 CREDITS

This is a required two-year course for all Berkeley International High School students, involving a thorough examination of our modern world with an emphasis on the interaction of people and events; the formation of students’ own opinions of events; and analysis of the progression of history over time. The primary aim and focus of the course is to guide students towards independent historical analysis. Skills emphasized include: primary and secondary source analysis; formation and completion of independent research; understanding of historical cause and effect; ability to articulate knowledge and opinions orally and in writing; synthesis of information and the ability to use that information to analyze new information. The junior year will focus on the history of the United States and South America through World War II. The senior year will focus on topics in the history of the Americas since WWII, particularly the Cold War as well as other relevant case studies. Students will study a subject of their choice or a historical investigation. Students who successfully complete both years of the course receive a waiver for the graduation requirements in American Government. At the end of this course students may choose to take the IB Higher Level exam, the IB Standard Level exam, or no exam at all. If students pass this exam they will earn an IB certificate and have the possibility of earning college credit.

**ENGLISH IB (HL)**

YEAR • 10 CREDITS

This is a required two-year course for all Berkeley International High School students. This course will provide comprehensive preparation in oral and written expression and in analytical and critical thought through a carefully chosen curriculum of international works by recognized world authors. The curriculum will provide reading and writing opportunities in both genre and time period. Study will focus on international literary works from which multicultural reading, thinking, and writing exercises will be drawn. Emphasis will be on the unique historical, cultural, and geographical influences upon each work. Students will develop a precise and informed critical eye for patterns of literary expression. At the end of this course students may choose to take the IB Higher Level exam, the IB Standard Level exam, or no exam at all. If students pass this exam they will earn an IB certificate and have the possibility of earning college credit.

**Junior Math Options****ALGEBRA 2 (P)**

YEAR • 10 CREDITS

This is the third year in the traditional sequence. Topics include linear, quadratic, exponential, logarithmic equations, matrices modeling, functions, graphing, complex numbers, counting and probability. A graphing calculator is required. The recommended models are Texas Instruments' TI 83+, TI 84, TI 86, and TI 89. **PREREQUISITE:** A grade of "C" or better in Geometry.

**IB MATH YEAR 1 (P)**

YEAR • 10 CREDITS

IB Math Year 1 is the first year of a two-year course that covers function analysis, trigonometric functions and graphs, right triangle and wrapping function trigonometry, including law of sines and cosines, right triangles, trigonometric identities, complex numbers, polar graphing, DeMoivre's theorem, the Binomial Theorem, differential and integral calculus and some elementary statistics. The goal of this course is to develop analytical and technical skills in students that may be applied in a variety of academic settings from social science to engineering and physics. Mathematics SL covers topics with a high degree of mathematical rigor with analytical proofs of theorems presented where appropriate. Students will apply topics to real world problems and problem solving settings. Applied

problem sets and projects may periodically be assigned to prepare students for diploma program assessments. They 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. Students will be capable of taking the AP Calculus AB exam and the SL level IB exam in the spring of their senior year.

**PREREQUISITE:** Successful completion of Algebra 2 or Interactive Math 3 with a "C" or better.

**MATHEMATICS IB (HL1)**

YEAR • 10 CREDITS

Mathematics HL is a two-year course that covers function analysis, trigonometric functions and graphs, right triangle and wrapping function trigonometry, including law of sines and cosines, right triangles, trigonometric identities, complex numbers, polar graphing, DeMoivre's theorem, proof by induction, the Binomial Theorem, differential and integral calculus and some elementary statistics. The goal of this course is to develop analytical and technical skills in students that may be applied in a variety of academic settings from social science to engineering and physics. Math HL covers topics with a high degree of mathematical rigor with analytical proofs of theorems presented where appropriate. Students will apply topics to real-world problems and problem-solving settings. Students will be capable of taking the AP Calculus BC exam and the HL level IB exam in the spring of their senior year.

**PREREQUISITE:** Successful completion of Algebra 2 or Interactive Math 3 with a "C" or better.

**Junior Science Options****BIOLOGY IB (SL)**

YEAR • 10 CREDITS

This course provides students with an in-depth study of biological concepts and principles. IB Biology SL includes biochemistry, cell biology, classic genetics, molecular genetics, biotechnology, and evolution. The course focuses on the structure and function of living organisms and the interactions between organisms and their environment. It includes an in-depth study of plants and animals, including evolutionary relationships, anatomy and physiology, and the principles of ecology. A required group project will be completed in conjunction with IB chemistry and physics students. There is a strong component emphasizing the process of scientific inquiry. Students will be capable

of taking the SL level IB exam in the spring of their junior year. **PREREQUISITES:** successful completion of Chemistry or Advanced Biology with a C or better. Students who have no prior high school science experience or a different high school science experience must meet with the IB Biology teacher before enrolling in this class.

### CHEMISTRY IB (SL)

YEAR • 10 CREDITS

This course focuses on matter and its interactions. The purpose is to develop students' understanding of the physical world around them and how chemical processes take place. This understanding will be developed through lecture and laboratory investigations that will help develop the students' analytical and problem-solving abilities. Students will learn about matter, measurement, chemical names and formulae, atomic structure, the period table, chemical reactions, phases of matter, solution and chemical bonds. They will also study reaction energy, reaction rates, chemical equilibrium, acids and bases, oxidation and reduction, organic chemistry, and two optional topics selected by the teacher. A required group project will be completed in conjunction with IB biology and physics students. Students will be capable of taking the SL level IB exam in the spring of their junior year.

**PREREQUISITES:** successful completion of geometry with a B or better or Algebra 2 with a C or better. successful completion of Chemistry and Advanced Biology with a C or better. Students who have no prior high school science experience or a different high school science experience must meet with the IB Chemistry teacher before enrolling in this class.

### ANATOMY AND PHYSIOLOGY (H)

YEAR • 10 CREDITS

An honors elective course devoted to the in-depth study of the human body with applications from histology, bacteriology, and chemistry. Major systems of the human body are stressed using requisite materials from many of the animal phyla. Extensive laboratory exercises are provided as well as collateral examinations of current studies in the human sciences. Individual student research investigations are encouraged. **ADVICE:** Students enrolling in this course should realize that it is a college level course and as such may require more study and preparation time than required in a normal high school course. Students who have completed a year of chemistry, biology and physics receive priority.

**PREREQUISITES:** Grade 11-12. Student must have a grade of "C" or better in Chemistry and Advanced Biology. This course fulfills UC/CSU Laboratory Science (d) requirement.

### AP ENVIRONMENTAL SCIENCE (AP)

YEAR • 10 CREDITS

The equivalent of an introductory college course in environmental science, this is a comprehensive, integrated exploration of biological, chemical and physical aspects of ecological issues, principles, and methods, including field study. The interdisciplinary curriculum draws on interrelationships between the natural and social sciences, and more global considerations, such as environmental justice and ethics. Topics covered include ecosystem and biome study, managing, restoring, and protecting ecosystems, energy efficiency and renewable energy, global climate change and ozone loss, water and land resources, and sustaining human societies. **PREREQUISITE:** Grades 11-12. Student must have completed Chemistry/AP Chemistry and Advanced Biology or AP Biology. Enrollment in AP Environmental Science is a yearlong commitment and requires submission of test results for the corresponding AP test. **ADVICE:** Preference for entrance to this course will be given to students who have completed Biology, Chemistry, and Physics. This course fulfills UC/CSU Laboratory Science (d) requirement.

### PHYSICS (P)

YEAR • 10 CREDITS

This is a laboratory course that covers classic mechanics (motion, forces, energy and momentum) in the fall term and waves, optics, light, electricity and magnetism in the spring term through a combination of lecture/discussion, labs, demonstration and problem solving practice. The laboratory experiments emphasize hands-on applications and problem solving that help students make sense of concepts. An "Egg Drop" project/contest near the end of the fall term provides an opportunity for students to apply the classic physics they have learned in a fun and creative way. An independent research project/presentation near the end of the spring term provides an important opportunity for students to challenge themselves to learn about a physics related topic of personal interest to them. **PREREQUISITES:** Grades 11-12. Completion of Algebra and Geometry or equivalents with a "C" or bet-

ter is recommended. This course fulfills UC/CSU Laboratory Science (d) requirement.

## Junior Electives

See Elective offerings starting on page 83.

## Senior Math Options

### MATHEMATICAL STUDIES IB (SL) YEAR • 10 CREDITS

This course includes the study of circular, polynomial, exponential, logarithmic, rational, and radical functions, polar equations and complex numbers, vectors, simple probability and data analysis, limits, continuity, and simple derivatives. The course develops the skills needed to cope with the mathematical demands of a technological society with an emphasis on the application of math to real-life situations. Students are presumed to have knowledge of linear, quadratic, exponential, and logarithmic equations, matrix arithmetic, elementary functions, graphing complex numbers, counting and probability. They will be required to learn the prerequisite topics to a greater depth and degree of formality. Students will be able to take the Math Studies SL level IB exam after completion of this course. Prerequisites: Completion of Algebra 2 or Interactive Math 3 with a “C”.

### MATHEMATICS IB (SL) YEAR • 10 CREDITS

This the second year of a two-year course that covers function analysis, trigonometric functions and graphs, right triangle and wrapping function trigonometry, including law of sines and cosines, right triangles, trigonometric identities, complex numbers, polar graphing, DeMoivre’s theorem, the Binomial Theorem, differential and integral calculus and some elementary statistics. The goal of this course is to develop analytical and technical skills in students that may be applied in a variety of academic settings from social science to engineering and physics. Mathematics SL covers topics with a high degree of mathematical rigor with analytical proofs of theorems presented where appropriate. Students will apply topics to real world problems and problem solving settings. Applied problem sets and projects may periodically be assigned to prepare students for diploma program assessments. They will be encouraged to develop an appreciation of the global nature of mathematics and the con-

tributions that have been made by persons from a variety of cultures. Students will be capable of taking the AP Calculus AB exam and the SL level IB exam in the spring of their senior year. **PREREQUISITE:** Successful completion of Algebra 2 or Interactive Math 3 with a “C” or better.

### MATHEMATICS IB (HL2) YEAR • 10 CREDITS

This the second year of a two-year course that covers function analysis, trigonometric functions and graphs, right triangle and wrapping function trigonometry, including law of sines and cosines, right triangles, trigonometric identities, complex numbers, polar graphing, DeMoivre’s theorem, proof by induction, the Binomial Theorem, differential and integral calculus and some elementary statistics. The goal of this course is to develop analytical and technical skills in students that may be applied in a variety of academic settings from social science to engineering and physics. Math HL covers topics with a high degree of mathematical rigor with analytical proofs of theorems presented where appropriate. Students will apply topics to real-world problems and problem-solving settings. Students will be capable of taking the AP Calculus BC exam and the HL level IB exam in the spring of their senior year. **PREREQUISITE:** Successful completion of Algebra 2 or Interactive Math 3 with a “C” or better.

## Senior Science Options

### BIOLOGY IB (SL) YEAR • 10 CREDITS

This course provides students with an in-depth study of biological concepts and principles. IB Biology SL includes biochemistry, cell biology, classic genetics, molecular genetics, biotechnology, and evolution. The course focuses on the structure and function of living organisms and the interactions between organisms and their environment. It includes an in-depth study of plants and animals, including evolutionary relationships, anatomy and physiology, and the principles of ecology. A required group project will be completed in conjunction with IB chemistry and physics students. There is a strong component emphasizing the process of scientific inquiry. Students will be capable of taking the SL level IB exam in the spring of their junior year. **PREREQUISITES:** successful completion of Chemistry or Advanced Biology with a C or better. Students who have no prior high school science

experience or a different high school science experience must meet with the IB Biology teacher before enrolling in this class.

### CHEMISTRY IB (SL)

YEAR • 10 CREDITS

This course focuses on matter and its interactions. The purpose is to develop students' understanding of the physical world around them and how chemical processes take place. This understanding will be developed through lecture and laboratory investigations that will help develop the students' analytical and problem-solving abilities. Students will learn about matter, measurement, chemical names and formulae, atomic structure, the period table, chemical reactions, phases of matter, solution and chemical bonds. They will also study reaction energy, reaction rates, chemical equilibrium, acids and bases, oxidation and reduction, organic chemistry, and two optional topics selected by the teacher. A required group project will be completed in conjunction with IB biology and physics students. Students will be capable of taking the SL level IB exam in the spring of their junior year.

**PREREQUISITE:** Strong interest in science, very strong preparation in Algebra 1 or Interactive Math 1. Success in this class does not require any previous knowledge of chemistry but does require good algebra, reading and problem-solving skills. Enrollment in AP Chemistry is a yearlong commitment and requires submission of test results for the corresponding AP test. Students must attend an informational meeting in the spring before the course, at which they will be given a sample assignment to complete and told about the expectations. This course fulfills UC/CSU Laboratory Science (d) requirement.

### ANATOMY AND PHYSIOLOGY (H)

YEAR • 10 CREDITS

An honors elective course devoted to the in-depth study of the human body with applications from histology, bacteriology, and chemistry. Major systems of the human body are stressed using requisite materials from many of the animal phyla. Extensive laboratory exercises are provided as well as collateral examinations of current studies in the human sciences. Individual student research investigations are encouraged. **ADVICE:** Students enrolling in this course should realize that it is a college level course and as such may require more study and preparation time than required in a normal high

school course. Students who have completed a year of chemistry, biology and physics receive priority.

**PREREQUISITES:** Grade 11-12. Student must have a grade of "C" or better in Chemistry and Advanced Biology. This course fulfills UC/CSU Laboratory Science (d) requirement.

### AP ENVIRONMENTAL SCIENCE (AP)

YEAR • 10 CREDITS

The equivalent of an introductory college course in environmental science, this is a comprehensive, integrated exploration of biological, chemical and physical aspects of ecological issues, principles, and methods, including field study. The interdisciplinary curriculum draws on interrelationships between the natural and social sciences, and more global considerations, such as environmental justice and ethics. Topics covered include ecosystem and biome study, managing, restoring, and protecting ecosystems, energy efficiency and renewable energy, global climate change and ozone loss, water and land resources, and sustaining human societies. **PREREQUISITE:** Grades 11-12. Student must have completed Chemistry/AP Chemistry and Advanced Biology or AP Biology. Enrollment in AP Environmental Science is a yearlong commitment and requires submission of test results for the corresponding AP test. **ADVICE:** Preference for entrance to this course will be given to students who have completed Biology, Chemistry, and Physics. This course fulfills UC/CSU Laboratory Science (d) requirement.

### PHYSICS (P)

YEAR • 10 CREDITS

This is a laboratory course that covers classic mechanics (motion, forces, energy and momentum) in the fall term and waves, optics, light, electricity and magnetism in the spring term through a combination of lecture/discussion, labs, demonstration and problem solving practice. The laboratory experiments emphasize hands-on applications and problem solving that help students make sense of concepts. An "Egg Drop" project/contest near the end of the fall term provides an opportunity for students to apply the classic physics they have learned in a fun and creative way. An independent research project/presentation near the end of the spring term provides an important opportunity for students to challenge themselves to learn about a physics related topic of personal interest to them. **PREREQUISITES:** Grades 11-12. Completion of Alge-

bra and Geometry or equivalents with a “C” or better is recommended. This course fulfills UC/CSU Laboratory Science (d) requirement.

### **PHYSICS IB (HL)**

YEAR • 10 CREDITS

This course focuses on developing an understanding of the universe we live in at its most basic level – all the way from the fundamental building blocks we are made of such as quarks and electrons up to the large-scale structure of universe as a whole and the set of rules governing its operation. Topics range from Newtonian Mechanics and Electromagnetism to Quantum and nuclear physics. The course places a strong emphasis on understanding the historical development of these ideas as well as the role of experimental design and the scientific method in developing, testing, challenging, and refining our theories of how the universe works. Students will be capable of taking the HL level exam in the spring of their senior year. **PREREQUISITES:** Concurrent enrollment or prior success in Calculus. Successful completion of Chemistry, SL Chemistry, Advanced Biology, or SL Biology with a C or better. Students who have no prior high school science experience or a different high school science experience must meet with the IB Physics teacher before enrolling in this class.

## **Senior Only Courses**

### **THEORY OF KNOWLEDGE (P)**

YEAR • 10 CREDITS

Theory of Knowledge (TOK), a culminating element of BIHS, encourages students to think critically about knowledge itself. Students investigate not only what they know, but how they know. Essentially they try to answer: “what are the ways we come to know something”? The class emphasizes the role of reason, emotion, perception, and language in the acquisition of knowledge. During the fourth quarter of TOK students will engage in a reflective process of their high school experience in order to bring together all the elements of their integrated four years in BIHS.

### **EXTENDED ESSAY**

Each student writes an extensive essay on a topic of their choice. Work on the essay is begun in the student’s English and history classes in the junior year. Students continue to work independently on their project with the help of a faculty advisor, com-

pleting the project in their senior year. This project is required of all BIHS students to encourage the development of independent research and writing skills. It is also a requirement for the International Baccalaureate Diploma.

### **CREATIVITY, ACTION, SERVICE (IBCAS)**

Although not a course, IBCAS is an essential element to every student’s experience in BIHS. It involves students in a range of activities alongside their academic studies throughout their junior and senior year. CAS enables students to enhance their person and interpersonal development through experiential learning. Students are required to complete 150 total hours over three categories in physical fitness, community service and expression of creativity outside of school. Students should, through these activities, develop greater awareness of themselves and concern for others, as well as the ability to work cooperatively with other people. Students develop their own plan to complete the IBCAS requirement with the help of the IB coordinator. This project provides an opportunity for leadership experience and fits naturally with many students’ interests.

## **Electives**

### **ECONOMICS IB (SL)**

YEAR • 10 CREDITS

IB Economics SL aims to promote awareness of how the impact of economics shapes global cooperation and decision-making by states as well as individuals. To achieve this understanding, students are taught economic theories, ideas and happenings from the points of view of different individuals, nations and cultures in the world economy. The class focuses on how individuals and governments make decisions using various fiscal and monetary policies to stabilize and promote economic growth. There is weight given to international and development economics as application of economic theory. Students can take the IB Economics SL test or the AP Macroeconomics test if they choose.

### **BIOTECHNOLOGY (ROP) 3/4 (P)**

YEAR • 10 CREDITS

This course covers chemistry and biochemistry concepts related to biotechnology, genetics, DNA transformations, protein purification techniques, cell growth and monitoring techniques, immunology and other aspects of biotechnology. **PRE-**

**REQUISITES:** Grade 12. Admission to the course is restricted to students who have successfully completed Biotech 1 and 2 with a “B” or better. This course fulfills UC/CSU Elective (g) requirement.

**IB STUDIO ART (SL) (HL)** YEAR • 10 CREDITS

Through an intense exploration of the history, and practice of two -dimensional and three-dimensional art making, students develop their own artistic direction and interests. The focus of the courses is in individual artistic process; the instructor facilitates the different explorations each student wishes to pursue. Students learn how artists research informs their studio practice, and they will be expected to maintain a research sketchbook of their own. They will be required to demonstrate in their studio pieces connections from their research sketchbook. All students will have the opportunity to plan an individual exhibit of their body of work during the spring semester. Student will have the option to take the SL level IB exam in the spring of their first year of the course, or the HL level IB exam in the spring of their second year.

**PREREQUISITE:** Creative Arts

**MUSIC COMPOSITION IB (SL) (HL)** YEAR • 10 CREDITS

Musical Perception and Analysis is designed to prepare students to analyze widely diverse musical genres and styles from both a historical and a cultural perspectives. We will prepare students by studying the elements of music (melody, harmony, rhythm, texture, tone color, form) as well as the function of music. We will study the elements of music (melody, harmony, rhythm, texture, tone color, form) as well as the function of music. In addition to traditional Eartraining and sight singing exercises, we will employ Eartraining software (Practica Musica) to help students engage with the different elements of music learning. This stream of study will culminate in an in-depth study of the Prescribed Work. We will study a variety of cultural topics, and a variety of eras of music, as well as a study of many traditional and popular music styles. We will learn how to write about the music that we hear, developing the curiosity inherent in an informed listener and practitioner of music. This stream of study will culminate in the Musical Investigation, a required element of the diploma in music. In addition to studying American and European music, including changes in musical

styles and instruments; we will study African, Asian, Latin American, and Middle Eastern music and instruments. We will analyze similarities and differences across time and place. **PREREQUISITE:** The ability to read music.