

International Baccalaureate Diploma Program

Oscar F. Smith High School was authorized by the International Baccalaureate Organization (IBO) of Geneva, Switzerland in February 2003 to offer the International Baccalaureate Diploma Program (IB) for rising juniors beginning in September 2004. IB students complete IB Exams every May.

Interested eighth graders who reside in Chesapeake apply for the Diploma Program by applying for the Chesapeake Public Schools' Pre-IB Academy at Oscar F. Smith High School. Completed applications are due by January 15 each year. (If January 15 falls on a weekend or holiday, the deadline will be the next school day) Up to 60 applicants are accepted each year for the four-year program. Chesapeake Public Schools' Pre-IB Academy instruction consists of intensified courses in Grades 9 and 10 in English, Spanish or French, social studies, science, and mathematics in preparation for the rigorous college-level curriculum of the Grade 11-12 Diploma Program. IB students have the opportunity to earn the International Baccalaureate diploma in addition to the Virginia Advanced Studies Diploma.

Students accepted for the IB Program receive all instruction for the four years of the program at Oscar F. Smith High School and are eligible for all Virginia High School League sports and other extra-curricular activities only at Oscar F. Smith High School. For IB students, daily busing is provided to the school from all areas of the city.

International Baccalaureate Diploma Program Course Descriptions

Group 1: Language A (First Language)

IB English HL 1

Course Description: This is the first year of an intensive, two-year study of language and literature in English. The course involves comparative study of literary works, both classical and contemporary, from various cultures. The texts, including American, British, and other world literature pieces in translation, are chosen from a broad list of prescribed authors and works representing different literary genres and styles. Students develop analytical and creative powers of expression, both in oral and written communication by practicing the skills involved in speaking and writing in a variety of styles and situations. Summer reading assignments are required. This course has end-of-course Standards of Learning tests.

IB English HL 2

Course Description: Students continue a rigorous study of language and literature in IB English HL 2. Students demonstrate an increasing proficiency in creative and analytical thinking skills through their speech and writing. They develop a thorough

understanding of the techniques involved in literary study and criticism, engage in detailed and critical examination of written works from world literature, and express a personal and independent response to literature. Numerous written and oral assignments are graded both internally and externally by the International Baccalaureate. Students take the higher-level IB English HL examination. Summer reading assignments are required.

Group 2: Language B (Second Language)

IB French SL, HL 4 or IB Spanish SL, HL 4

Course Description: IB French 4 or Spanish 4 is the first part of a two-year course in which students continue to develop proficiency in listening, speaking, reading and writing the target language. The course prepares students to use the language appropriately in a range of situations and contexts and for a variety of purposes. To fulfill IB internal assessment requirements, students read and analyze cultural literature in context and practice using the target language creatively through oral presentations and conversation. IB French HL or IB Spanish HL is an extension of French or Spanish language that includes a greater emphasis on fluency in the target language and a deeper understanding of the culture(s) of the countries in which the target language is spoken. A summer assignment is required.

IB French SL, HL 5 or IB Spanish SL, HL 5

Course Description: IB French 5 or Spanish 5, students employ their skills of listening, speaking, reading, and writing in a variety of culturally and linguistically sophisticated formats. Students continue to develop skills through the use of authentic materials, including recordings, films, newspapers and magazines, in addition to selected literary works. IB internal assessment monitoring continues using dialogue, interactive conversation, and oral presentations in the target language. At the end of the course, students take the IB Language B Standard-Level or Higher-Level examination. A summer assignment is required.

GROUP 3: Individuals and Societies

IB History of the Americas HL

Course Description: The first of a two-part course, IB History of the Americas is an in-depth study of twentieth century world history with emphasis on the history of the Americas from 1840 to 1995. This course is designed to develop historical research skills, analytical thinking skills, and skills for interpreting political, military, social, and economic events of the twentieth century. Students engage in extensive reading, independent research, and analysis of primary and secondary source documents. At the end of the course, students have the opportunity to take the Advanced Placement US History examination. Summer assignments are required.

IB Topics in 20th Century History HL

Course Description: In this course, students study selected twentieth century topics in world history and examine case studies of the major events and issues of the twentieth

century. Students read widely acquiring the skills to evaluate, to interpret, and to use source material critically as historical evidence. They also engage in expository writing that demonstrates an awareness of historical perspective and a consistently high level of critical analysis and handling of evidence. At the end of the course, students take the higher-level examination in IB History. Summer assignments are required.

GROUP 4: Experimental Sciences

IB Biology SL, HL

Course Description: This is the first part of a two-year course, which provides an in-depth study of biology. The course promotes understanding of the important relationships, processes, mechanisms, extensions, and applications of biological concepts. Through scientific inquiry, students learn that science is a process as well as personal experience. They also use knowledge of biology to explore and analyze environmental and social concerns on a global level. Students participate in structured labs, write research papers, design original research projects, and participate in a required IB interdisciplinary group project. IB Biology HL is an extension of Biology SL that requires additional lab hours and more in-depth study of several Biology Higher-Level options. A summer assignment, which reviews basic biological principles learned in CPS Pre-IB Biology, is required.

IB Biology SL, HL 2

Course Description: In IB Biology 2, students continue to develop a broad, general understanding of the principles of biology. Four basic biological concepts that run throughout IB Biology HL are: (1) structure and function; (2) universality versus diversity; (3) equilibrium within systems; and (4) the evolution of structure and functions. Students continue to explore biological realities and ethical concerns on a global level. Students take the Standard-Level or Higher-Level examination in biology. A summer assignment is required.

IB Chemistry SL, HL 1

Course Description: IB Chemistry 1 develops the ability to critically analyze scientific literature and to develop manipulative and experimental skills necessary to perform college-level scientific investigations. Students participate in structured labs, write research papers, design original research projects, and participate in a required IB interdisciplinary group project. Student-centered cooperative learning as well as teacher-directed instruction provides the student a college-level chemistry experience. The course increases student awareness of global issues pertaining to chemistry. IB Chemistry HL is an extension of IB Chemistry SL that requires additional laboratory hours and more in-depth study of several Chemistry Higher Level options. A summer assignment is required.

IB Chemistry SL, HL 2

Course Description: In IB Chemistry 2, students expand their knowledge and experimental skills obtained in IB Chemistry 1 in preparation for further study of pure

and applied sciences in higher education. This course increases student awareness of global issues pertaining to chemistry and prepares students for International Baccalaureate internal and external assessment. Students take the Standard-Level or Higher-Level examination in chemistry at the end of the course.

IB Physics SL, HL 1

Course Description: IB Physics 1 course offers a high-powered physics curriculum that will prepare students for college level calculus-based physics. The course allows students to develop the manipulative and experimental skills necessary to perform college-level physics investigations. Students participate in structured labs, design original research projects, and participate in a required IB interdisciplinary group project. Students learn a breadth of core physics principals from mechanics and thermal physics to gravitation and nuclear physics. The course also increases student awareness of global issues pertaining to Physics. IB Physics HL is an extension of IB Physics SL that requires additional laboratory hours and more in-depth study of several Physics Higher Level options. A summer assignment is required.

IB Physics SL, HL 2

Course Description: In IB Physics 2, students expand their knowledge of core physics topics and build upon experimental skills obtained in IB Physics 1. They also study selected options in depth, such as wave phenomena and quantum and nuclear physics, in preparation for further study of pure and applied sciences in higher education. The second year of the course builds upon student awareness of global issues pertaining to physics and prepares students for International Baccalaureate internal and external assessments. Students take the Standard-Level or Higher-Level examination in Physics at the end of the course.

Group Five: Mathematics

IB Mathematics: Analysis & Approaches SL, HL1

Course Description: International Baccalaureate Mathematics: Analysis and Approaches SL/HL 1 is the first year of a two-year course designed for students who enjoy developing their mathematics skills to become fluent in the construction of mathematical arguments and develop strong skills in mathematical thinking. The course emphasizes algebraic methods and fosters skills in real and abstract mathematic problem solving. Topics include partial fractions, formal proofs, trigonometry using reciprocal functions, and more involved trigonometric identities. Probability theory will include a formal presentation of expectation through a variety of distributions and Bayes theorem, as well as an introduction to hypothesis testing using the normal distribution. Students who choose Mathematics: Analysis and Approaches at the Higher Level should have strong algebraic skills and the ability to understand simple proofs. They should be students who enjoy spending time on problems and solving challenging math problems. Additional HL calculus topics extend and build upon the aims, concepts and skills from the SL content including useful applications of differential and integral calculus. A summer assignment is required.

IB Mathematics: Analysis & Approaches Studies SL, HL 2

Course Description: International Baccalaureate Mathematics: Analysis and Approaches SL/HL 2 further builds upon the core concepts algebra and algebraic functions, geometry, trigonometry, statistics and probability, and calculus. Additional HL topics include conditional probability theory in the form of Bayes Theorem, properties of discrete and continuous random variables, circular functions, important trigonometric identities, and vectors in two and three dimensions. Students take the IB Mathematics SL/HL examination. A summer assignment is required.

IB Mathematics: Applications & Interpretation SL, HL 1

Course Description: International Baccalaureate Mathematics: Applications and Interpretation SL/HL 1 is the first year of a two-year course designed for students who are interested in developing their mathematics skills for describing the world, for modeling, and for solving practical problems using technology. Students who take the Applications and Interpretation course will be those who prefer to apply mathematics in a practical context. General topics include numbers and algebra, functions, geometry and trigonometry, probability and statistics, and calculus, with a primary emphasis on functions and statistics. The curriculum also covers matrices and their applications for solving systems of equations, piecewise functions, an introduction to formal proofs, and a more formal investigation of geometry using Voronoi diagrams, adjacency matrices, and tree and cycle diagrams. Statistical theory will include basic measures of spread and central tendency as well as a formal introduction to hypothesis testing through the normal, Chi-squared, binomial, and Poisson distributions. Mathematics: applications and interpretation will develop mathematical thinking, often in the context of a practical problem and using technology to justify assumptions. Students who choose to take IB Mathematics: Applications and Interpretation at the Higher Level should have expert algebraic skills and experience with solving real-world problems using mathematics. A summer assignment is required.

IB Mathematics: Applications & Interpretation SL, HL 2

Course Description: In IB Mathematics SL 2, students build upon skills learned in the first year of IB Mathematics: Applications and Interpretation. Students continue to learn how these concepts relate to real world situations and apply further numerical and graphical techniques and further key functions which can be used to model and interpret practical situations. Higher-level content includes the laws of logarithms, complex numbers and matrices, alternative measurement system for angles and trigonometric identities, matrices to transformations, kinematics, Graph theory, validity and reliability of data, non-linear regression, transition matrices, links between matrices, probability, and eigenvalues. Further differential and integral calculus techniques are introduced to enable students to model and interpret practical contexts. Students take the IB Mathematics: Applications and Interpretation SL/HL exam. A summer assignment is required.

Group 6: Arts and Electives

IB Psychology SL, HL 1 and 2

Course Description: Course Description: IB Psychology 1 and 2 give students a broad understanding of psychology and of its different levels of analysis. The course introduces students to diverse methods of psychological inquiry and promotes ethical practices and responsibilities in psychological inquiry. To meet this aim, students study research design, methods, statistics and ethical issues in psychological research and application and undertake one or more research studies. IB Psychology HL is an extension of IB Psychology SL, which introduces students to the psychology of dysfunctional behavior and psychodynamic psychology. In IB Psychology, students undertake an experimental study requiring them to research, design, implement, and analyze the resulting data. At the end of the second year, students take the Standard-Level or Higher-Level IB Psychology examination. Summer assignments are required.

IB Visual Arts HL, SL 1 and 2

Course Description: IB Visual Arts 1 and 2 stimulate and train the student's visual awareness, increase the student's perceptive and critical responses to the art of various cultures, and enable the student to discover, develop, and enjoy different means of creative visual expression. The student is encouraged to develop an intensely personal view of the human condition and of nature through study of visual arts and to develop an informed attitude towards art and design in all its forms, both in history and in the contemporary world. The student may pursue one of two options at the standard level or take IB Visual Arts at the higher level depending upon his/her level of artistic ability. Students who think they would enjoy exploring art but who do not regard themselves as especially artistic can be very successful at the standard level. More serious artists benefit from taking IB Visual Arts HL. Because much of the course involves independent study and individual art production, both the standard level and higher level are taught together. External assessments in this course consist of studio work and research workbooks, which are evaluated by an IB art examiner. Summer assignments are required.

IB World Religions SL 1 and 2

Course Description: IB World Religions 1 and 2 is a systematic, analytical, yet empathetic study of the variety of beliefs and practices encountered in nine main religions of the world. The course seeks to promote an awareness of religious issues in the contemporary world by requiring the study of a diverse range of religions. The course consists of an introductory unit, exploring five of the nine living world religions that form the basis of the syllabus. This is complemented by an in-depth study of two religions chosen from six world religions. This part of the syllabus is guided by themes, key concepts and key questions. The final component is the investigative study, which provides opportunities for individual research of an aspect of the religious experience, practice or belief of a group and/or individual adherents. Students take the standard level IB World Religions SL examination at the end of the course. A summer assignment is required.

REQUIRED INTERDISCIPLINARY SEMINAR COURSE

IB Theory of Knowledge 1 and 2

Course Description: Students who are candidates for the International Baccalaureate Diploma are required to complete this course. Part 1 is taken in the spring of the junior year and part 2 in the fall of the senior year. Students learn to better understand themselves as “knowers” by exploring the various methods they use to “know” the truth of a given thought, feeling, or belief. This exploration also involves how various “ways of knowing” are applied to all of the areas of knowledge in the IB curriculum: mathematics, natural science, human science, history, art, and ethics. Through the study of eastern and western philosophies, logic and reason, intuition, and faith, students explore various belief systems, both personal and global, in an attempt to determine their “truth.” To accomplish this, students read selected texts, write about their findings, and discuss, in great detail, their own thoughts on course topics. Students must complete an internal assessment in the form of a presentation and an external assessment in the form of a 1,600 word essay that addresses one of six prescribed titles.