Carlucci American International School of Lisbon

# IB Diploma Program HANDBOOK

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# AN IB EDUCATION: Introduction

The International Baccalaureate was founded in 1968. It grew out of the efforts of international schools as early as 1924 to establish a common curriculum and university entry credential. The schools were also motivated by an idealistic vision. They hoped that critical thinking and exposure to a variety of points of view would encourage intercultural understanding by young people.

They concentrated on the last two years of school before university studies in order to build a curriculum that would lead to what they called baccalaureate, administered in any country, recognized by universities everywhere.

## What is the IB Diploma Program?

The International Baccalaureate (IB) Diploma Program is:

- A comprehensive and rigorous two-year curriculum, leading to external examinations.
- For students in grades 11 and 12.
- Based on the pattern of no particular country.
- Aimed at providing students with a balanced education.

## What can the IB do for the student?

- The IB program can help students to become well-rounded, well-educated young adults.
- The IB program prepares students for university work.
- The IB program provides continuity for students who transfer among international schools.
- The IB Diploma provides entrance to the university systems of many countries around the world.
- Students who earn an IB Diploma may earn up to one year of advanced placement credit in American universities and colleges.

## Eligibility for the IB Diploma Program at CAISL

One of the unfortunate myths about the IB program is that it is “elitist” and designed for only the student with straight A’s. This is untrue; however, students and parents must be aware that it is a demanding program that requires hard work, strong **organization skills** and commitment to **meet deadlines**.

The design of the IB Program enables students to focus on the subjects in which they have special interest or aptitude. Any student who wishes to challenge him/herself and **is willing to work hard** can succeed in the IB Program and is encouraged to work for the full Diploma. CAISL has an open policy to the IB Program, but for some subjects there are pre-requisites such as: a student cannot

enroll in a Language B without having at least 3 or 4 years of experience in that language, and to enroll in Mathematics AA HL a student must have had Algebra 2 with a final grade of A- or above. (More details in the subject's descriptions).

# THE DIPLOMA PROGRAM: Requirements

Diploma candidates are required to select one subject from each of six subject groups, listed on the outside of the model:

**Group 1** Studies in Language and Literature

**Group 2** Language Acquisition

**Group 3** Individuals and Societies

**Group 4** Sciences

**Group 5** Mathematics

**Group 6** The Arts (can be replaced by another subject from Groups 1–4, but not Group 5)

At least three and no more than four subjects are taken at higher level (HL) and the others at standard level (SL). Thus, students can explore some subjects in depth and some more broadly over the two-year period. The selection of a specific subject and its level might depend on the university entry requirements.

The curriculum contains six subject groups together with a core made up of three separate parts.

All three parts of the core - Extended Essay, Theory of Knowledge, Creativity, Activity, Service (CAS) – are compulsory and are central to the philosophy of the Diploma program.

## IB Diploma Program Core Requirements

### Theory of knowledge (TOK)

Theory of knowledge (TOK) is a required interdisciplinary course intended to stimulate critical reflection upon the knowledge and experience gained inside and outside the classroom. TOK should involve at least 100 hours of teaching. At CAISL, students begin TOK in their junior year and complete it in the first semester of their senior year. TOK challenges students to:

- Question the bases of knowledge.
- Be aware of subjective and ideological biases.
- Develop a personal mode of thought based on analysis of evidence expressed in a rational argument.

The key element in the IB educational philosophy, TOK seeks to develop a coherent approach to learning which transcends and unifies the academic subjects and encourages appreciation of other cultural perspectives.

Students are assessed on the basis of **one required essay** of a maximum of 1,600 words chosen from a list of 6 prescribed titles and an **exhibition** of 3 objects that connect to 35 "IA prompts". The exhibition is completed at the end of grade 11.

## Extended Essay (EE)

Diploma candidates are required to undertake original research and write an **Extended Essay (EE)** of some 4000 words. The project offers the opportunity to investigate a topic of special interest and acquaints students with the kind of independent research and writing skills expected at university. Students can choose to write on a topic in one of the subjects available on the EE guide.

The Extended Essay should be focused in its approach, but apart from initial teacher supervision and guidance, it should be the student's own personal research, albeit at an introductory level.

At CAISL, the Extended Essay is introduced in November/December of the junior year and is completed by September/October of the senior year. Each student works one-on-one with a teacher/supervisor and signs a contract in which he/she promises to adhere to an internal timetable which guides the steps in the research process: choosing a topic, defining a research question, researching, planning.

## Creativity, Activity, Service (CAS)

**Creativity, Activity, Service** is known by its acronym CAS and is a fundamental part of the diploma curriculum. Students in the IB Diploma program must organize the 3 strands of CAS defined as follows:

> *"Creativity – exploring and extending ideas leading to an original or interpretative product or performance;*
> *Activity – physical exertion contributing to a healthy lifestyle;*
> *Service – collaborative and reciprocal engagement with the community in response to an authentic need."*
>
> *in CAS guide, p.8*

The CAS requirement takes seriously the importance of life outside the world of scholarship, providing a refreshing counterbalance to the academic self-absorption some may feel within a demanding school program. Participation in theater productions, sports and community service activities encourages young people to share their energies and special talents while developing awareness, concern, and the ability to work cooperatively with others.

CAS begins formally in September of the student junior year and continues regularly for at least 18 months.

All students are required to keep a CAS Portfolio and to have at least 3 formal interviews with their CAS Coordinator.

At CAISL students take part in a variety of activities such as:

- Habitat for Humanity
- MUN/THIMUN
- Student Council
- Banco Alimentar
- Community Service Club
- Visits to Lar das Fisgas

# ASSESSMENT IN THE IB DIPLOMA PROGRAM

Assessment of subjects is based on a combination of internal/IB moderated assessment and external examinations in May of the senior year.

Each subject is graded on a scale of 1 (minimum) to 7 (maximum). Up to 3 additional points may be earned for performance in the Extended Essay and Theory of Knowledge.

The maximum possible score which can be achieved in the IB Diploma is 45 points (6x7=42 + 3= 45). The minimum score to obtain the Diploma is 24 with no less than an average of 4 on the Higher-Level Subjects.

The Extended Essay and TOK are graded in a letter grade format from E (elementary/failing) to A (excellent). **If a student obtains an E (elementary/failing) in either the TOK OR the Extended Essay, the student fails the IB Diploma.**

| TOK/EE Grading Matrix | | Theory of Knowledge (TOK) Grade | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | E |
| Extended Essay (EE) Grade | A | +3 | +3 | +2 | +2 | Fail |
| | B | +3 | +2 | +2 | +1 | Fail |
| | C | +2 | +2 | +1 | +0 | Fail |
| | D | +2 | +1 | +0 | +0 | Fail |
| | E | Fail | Fail | Fail | Fail | Fail |

Students who fail to receive the Diploma or pass a subject exam have the right to retake any subject either in the November or May examination session. The higher score will count, and the Diploma may be awarded.

*For more information regarding Assessment please read CAISL Assessment Policy that can be found on our website.*

## Academic Integrity

All work done by a student must be the student's own work. If academic misconduct is suspected, the IB will be notified, and the student might be at risk of losing the Diploma:

"The IB defines student academic misconduct as deliberate or inadvertent behavior that has the potential to result in the student, or anyone else, gaining an unfair advantage in one or more components of assessment. Behavior that may disadvantage another student is also regarded as academic misconduct. It also includes any act that potentially threatens the integrity of IB examinations and assessments that happens before, during or after the completion of the assessment or examination, paper-based or digital. This includes behavior in school, out of school and online."

*(in Academic Integrity policy, page 3)*

# EXAM FEES

| Paid by CAISL | Paid by the Candidate |
|---|---|
| Annual Fee | Subject Fees* |

The total exam registration fees, which are determined by the IB each year, do not typically exceed 600€. One **single** payment is required in October of senior year.

# THE IB PROGRAM AND UNIVERSITY ADMISSION

The IB Diploma Program is recognized worldwide as a rigorous academic curriculum that challenges students intellectually while helping them grow into well-rounded individuals. Universities view IB students favorably, as the program demonstrates a student's commitment to academic excellence and personal development.

## University Recognition

### UNITED STATES

Many U.S. universities recognize the IB Diploma as a strong academic credential and award college credit to diploma holders. Some institutions grant up to 30 credits (equivalent to the first year of university), while others offer credit for Higher Level (HL) subjects with scores of 5 or above. Some also grant credit for individual HL classes.

### UNITED KINGDOM

UK universities consider the IB Diploma equivalent to A-Levels in the admissions process. Students typically receive conditional offers based on overall point totals and specific subject scores (e.g., 34 points overall, with a 5 in HL Math and Physics).

### PORTUGAL

Students with an IB Diploma may use their subject results in place of national entrance exams if applying to universities that recognize **Artigo 20.º-A** of **Decreto-Lei n.º 296-A/98**.

### SPAIN

Spain recognizes the IB Diploma and exempts diploma holders from taking the “Pruebas de Aptitud de Acceso a la Universidad” (Selectividad).

## List of IB Courses Offered at CAISL

| Group | | Subject | Level |
|---|---|---|---|
| 1 | Studies in Language & Literature | English A Lang. Lit<br>Portuguese A Lang. Lit | Standard/Higher |
| 2 | Language Acquisition | English B<br>Portuguese B<br>French B<br>Spanish B | Standard/Higher |
| | Language B: Ab Initio | French Ab<br>Spanish Ab | Standard (only) |
| 3 | Individuals and Societies | History<br>Business and Management<br>Economics<br>Psychology | Standard/Higher |
| 3/4 | Transdisciplinary | Environmental Systems & Societies | Standard/Higher |
| 4 | Sciences | Physics<br>Chemistry<br>Biology<br>Computer Science | Standard/Higher |
| 5 | Mathematics | Mathematics: Analysis & Approaches<br>Mathematics: Applications & Interpretations | Standard/Higher |
| 6 | The Arts | Visual Arts<br>Music<br>Theater<br>Film | Standard/Higher |

A breakdown of each subject can be found in the "IB COURSES: Subject Description" section of this document. In addition to these subject-specific guides, the IB has published "Subject Briefs," available on the IB website (ibo.org). These briefs provide concise and informative overviews of each course, including its description and aims, curriculum model, and assessment structure. They are a helpful resource for understanding the learning outcomes and the various components that make up the course assessment.

# IB COURSES: Subject Description

## GROUP 1 Studies in Language & Literature

### ENGLISH A Lang. Lit.; PORTUGUESE A Lang. Lit.

*"The language A: language and literature course students will learn about the complex and dynamic nature of language and explore both its practical and aesthetic dimensions. They will explore the crucial role language plays in communication, reflecting experience and shaping the world. Students will also learn about their own roles as producers of language and develop their productive skills. Throughout the course, students will explore the various ways in which language choices, text types, literary forms and contextual elements all effect meaning. Through close analysis of various text types and literary forms, students will consider their own interpretations, as well as the critical perspectives of others, to explore how such positions are shaped by cultural belief systems and to negotiate meanings for texts. Students will engage in activities that involve them in the process of production and help shape their critical awareness of how texts and their associated visual and audio elements work together to influence the audience/reader and how audiences/readers open up the possibilities of texts. With its focus on a wide variety of communicative acts, the course is meant to develop sensitivity to the foundational nature, and pervasive influence, of language in the world at large."*

*in Language A: Language and Literature guide, p. 20*

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment | Paper 1 & Paper 2 (70%) | Paper 1 & Paper 2 (60%) |
| Internal Assessment | Individual oral (30%) | Individual oral (20%)<br>HL Essay (1200-1500 words) on one non-literary text or a collection of non-literary texts by one same author, or a literary text or work studied during the course (20%) |

**Note**: Students can also study two Language A courses, omitting Group 2.

# GROUP 2 Language Acquisition

## ENGLISH B; PORTUGUESE B; FRENCH B; SPANISH B

**Pre-Requisite:** 3 to 4 years of prior experience in the target language

> *"In the Language B course, students develop the ability to communicate in the target language through the study of language, themes and texts. In doing so, they also develop conceptual understandings of how language works. Communication is evidenced through receptive, productive and interactive skills across a range of contexts and purposes that are appropriate to the level of the course. The study of language requires careful attention to forms, structures, functions and conceptual understandings of language. Knowledge of vocabulary and grammar—the what of language—is reinforced and extended by understanding the why and how of language: audience, context, purpose, meaning. Students expand the range of their communication skills by understanding and producing a wide variety of oral and written texts for audiences, contexts and purposes associated with academic and personal interests. For the development of receptive skills, language B students must study authentic texts that explore the culture(s) of the target language. In addition, the study of two literary works is required at HL. A key aim of the language B course is to develop international mindedness through the study of language, culture, and ideas and issues of global significance."*

in Language B guide, p. 17

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment (75%) | Paper 1: Writing (25%)<br>Paper 2: Listening and Reading (50%) | Paper 1: Writing (25%)<br>Paper 2: Listening and Reading (50%) |
| Internal Assessment (25%) | Individual oral based on a visual | Individual oral based on a literary extract |

## FRENCH AB Initio; SPANISH AB Initio

> *"Language ab initio is a language acquisition course designed for students with no prior experience of the target language, or for those students with very limited previous exposure. It should be noted that language ab initio is offered at SL only.*
>
> *Because of the inherent difficulty of defining what constitutes "very limited exposure" to a language, it is not possible to list specific conditions such as the number of hours or the nature of previous language instruction; however, it is important to note that any student who is already able to understand and respond to spoken and written language on a range of common topics is not to be placed in language ab initio as this would not provide an appropriate academic challenge, nor is it fair for those students who are genuine beginners of the language."*

in Language AB initio guide, p. 6

| Assessment Component | Standard Level (SL) only | Higher Level (HL) |
|---|---|---|
| External Assessment (75%) | Paper 1: Writing (25%)<br>Paper 2: Listening and Reading (50%) | N/A |
| Internal Assessment (25%) | Individual oral based on a visual and course theme | N/A |

# GROUP 3 Individuals & Societies

## HISTORY

*"The History course is a world history course based on a comparative and multi-perspective approach to history. It involves the study of a variety of types of history, including political, economic, social and cultural, and provides a balance of structure and flexibility. The course emphasizes the importance of encouraging students to think historically and to develop historical skills as well as gaining factual knowledge. It puts a premium on developing the skills of critical thinking, and on developing an understanding of multiple interpretations of history. In this way, the course involves a challenging and demanding critical exploration of the past."*

in History Guide, p. 5

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment | Paper 1 (30%)<br>Paper 2 (45%) | Paper 1 (20%)<br>Paper 2 (25%)<br>Paper 3 (35%) |
| Internal Assessment | Historical investigation (25%) | Historical investigation (20%) |

## BUSINESS AND MANAGEMENT

*"The business management course is designed to meet the current and future needs of students who want to develop their knowledge of business content, concepts and tools to assist with business decision-making. Future employees, business leaders, entrepreneurs or social entrepreneurs need to be confident, creative and compassionate as change agents for business in an increasingly interconnected global marketplace. The business management course is designed to encourage the development of these attributes.*

*Through the exploration of four interdisciplinary concepts—creativity, change, ethics and sustainability—this course empowers students to explore these concepts from a business perspective. Business management focuses on business functions, management processes and decision-making in contemporary contexts of strategic uncertainty.*

*Students examine how business decisions are influenced by factors that are internal and external to an organization and how these decisions impact upon a range of internal and external stakeholders. Emphasis is placed on strategic decision-making and the operational business functions of human resource management, finance and accounts, marketing, and operations management."*

in Business management guide, p. 6

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment | Paper 1 (35%)<br>Paper 2 (35%) | Paper 1 (25%)<br>Paper 2 (30%)<br>Paper 3 (25%) |
| Internal Assessment | Research Project (30%) | Research Project (20%) |

## ECONOMICS

*"Economics is an exciting, dynamic subject that allows students to develop an understanding of the complexities and interdependence of economic activities in a rapidly changing world. At the heart of economic theory is the problem of scarcity. While the world's population has unlimited needs and wants, there are limited resources to satisfy these needs and wants. As a result of this scarcity, choices have to be made. The economics course, at both SL and HL, uses economic theories to examine the ways in which these choices are made:*

- *at the level of producers and consumers in individual markets (microeconomics)*
- *at the level of the government and the national economy (macroeconomics)*
- *at an international level where countries are becoming increasingly interdependent through international trade and the movement of labour and capital (the global economy).*

*The choices made by economic agents (consumers, producers and governments) generate positive and negative outcomes and these outcomes affect the relative well-being of individuals and societies. As a social science, economics examines these choices through the use of models and theories."*

(in Economics guide, p. 6)

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment | Paper 1 (30%)<br>Paper 2 (40%) | Paper 1 (20%)<br>Paper 2 (30%)<br>Paper 3 (30%) |
| Internal Assessment | Portfolio: 3 commentaries (30%) | Portfolio: 3 commentaries (20%) |

## PSYCHOLOGY (last assessment 2026)

*"Psychology is the rigorous and systematic study of mental processes and behavior. It is a complex subject which draws on concepts, methods and understandings from a number of different disciplines. There is no single approach that would describe or explain mental processes and behavior on its own as human beings are complex*

*animals, with highly developed frontal lobes, cognitive abilities, involved social structures and cultures. The study of behavior and mental processes requires a multidisciplinary approach and the use of a variety of research techniques whilst recognizing that behavior is not a static phenomenon, it is adaptive, and as the world, societies and challenges facing societies change, so does behavior.*

*At the core of the DP psychology course is an introduction to three different approaches to understanding behavior:*

- *biological approach to understanding behavior*
- *cognitive approach to understanding behavior*
- *sociocultural approach to understand behavior"*

in Psychology guide, p. 12

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment | Paper 1 (50%)<br>Paper 2 (25%) | Paper 1 (40%)<br>Paper 2 (20%)<br>Paper 3 (20%) |
| Internal Assessment | Experimental study (25%) | Experimental study (20%) |

## PSYCHOLOGY (first assessment 2027)

*"Psychology is the scientific study of human and animal cognition and behavior with the goal of solving problems and increasing the quality of life for individuals and their communities. Psychologists attempt to describe, explain, predict and change behavior by observing humans, forming hypotheses and theories regarding behavior and testing them empirically. However, psychology is also a human science and looks for the meaning behind human behavior through conversations and inquiry.*

*Psychology today: Psychology is a rich and diverse field of study with many different perspectives. Those fields have traditionally been dominated by a Western perspective, but modern psychologists recognize the importance of other voices. Not only are the voices of women and those of minority ethnic communities now more common in psychological research, but there is a shift from psychologists studying other cultures using Western understandings to an appreciation of how Indigenous psychologies contribute to a fuller understanding of human cognition and behavior.*

*In the DP psychology course, students will develop knowledge and understanding of psychological concepts, content and contexts, as well as the models and theories associated with these areas. Through the course, students will develop the ability to engage in critical thinking, assess evidence and acknowledge the evolving nature of knowledge. They acquire the ability to seek fresh information and generate understanding by employing research methodologies. The goal of the DP psychology course is not to create psychologists, but to promote psychological literacy.*

*Psychological literacy includes:*

- *understanding basic concepts and principles of psychology*
- *understanding scientific research process*
- *having problem-solving skills*
- *applying psychological principles to personal, social or organizational problems*
- *acting ethically*
- *thinking critically*
- *communicating well in different contexts*
- *having cultural competence and respecting diversity*
- *having self-awareness."*

in Psychology guide, p. 6

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment | Paper 1 (35%)<br>Paper 2 (35%) | Paper 1 (25%)<br>Paper 2 (25%)<br>Paper 3 (30%) |
| Internal Assessment | Research proposal (30%) | Research Proposal (20%) |

## GROUP 3/4 ENVIRONMENTAL SYSTEMS AND SOCIETIES (transdisciplinary)

*"Environmental systems and societies (ESS) is a dynamic interdisciplinary subject that takes 21st-century challenges and socio-environmental real-world issues and looks at them through the lens of human societies and the interrelationships of the natural world: biosphere, atmosphere, hydrosphere and lithosphere. Students explore how these relationships change over time and space, consider the potential adaptations and mitigations that human societies and the natural world may currently be undergoing, and how these could impact the future and our place in it. ESS is an interdisciplinary course that is offered at both standard level (SL) and higher level (HL). The course combines a mixture of methodologies, techniques and knowledge associated with the subject groups of individual and societies, and sciences. (...) Various disciplines from the sciences and social sciences come together in ESS. These include, but are not limited to, ecology, economics, chemistry, geography, design, psychology, physics, law, philosophy, anthropology and sociology. The particular knowledge, concepts, skills and approaches from these disciplines are combined to enable ESS to be studied from a unique and integrated perspective.*

*The course is firmly grounded in both the scientific exploration of environmental systems in terms of their structure and function, and in the exploration of cultural, economic, ethical, political and legal interactions of societies with environment and sustainability issues. Consequently, ESS requires its students to develop a diverse set of skills, knowledge, and understandings.*

*The interdisciplinary nature of the course means students gain a holistic understanding from the various topics studied; they undertake research and investigations, and participate in philosophical, ethical and pragmatic discussions about the issues involved, from the local to the global level."*

in Environmental Systems and Societies guide, p. 6

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment | Paper 1 Case Study (25%)<br>Paper 2 Shorts Answers and Structured Essays (50%) | Paper 1 Case Study (30%)<br>Paper 2 Shorts Answers and Structured Essays (50%) |
| Internal Assessment | Individual Investigation (25%) | Individual Investigation (20%) |

# GROUP 4 Sciences

## BIOLOGY

**Pre-Requisite:** Student should have already studied one year of Biology during high school.

*"Of all the sciences, biology is a study that takes more of a pragmatic view than a theoretical approach. The earliest evidence of life on Earth dates from at least 3.5 billion years ago. Through reproduction and natural selection, life has diversified tremendously, occupying a wide variety of niches. This diversity makes biology both a deeply fascinating and significantly challenging study.*
*The study of life makes progress through not only advances in techniques, but also pattern recognition, controlled experiments and collaboration between scientists. Unifying themes provide frameworks for interpretation and help us make sense of the living world: Form and function, Unity and diversity, Continuity and change, and Interaction and interdependence are four of the themes around which the biology syllabus is constructed, although other frameworks are possible.*
*The scale of life in biology ranges from the molecules and cells of organisms to ecosystems and the biosphere. This way of considering complex systems as simpler components—an approach known as reductionism—makes systems more manageable to study. It is the foundation of controlled experiments and has thus enabled major discoveries, but it provides an incomplete view of life. At each level of biological organization, different properties exist. Living systems are based on interactions, interdependence and integration of components between all levels of biological organization.*
*A student of biology should gain not only a conceptual understanding of the subject, but also an awareness of how biologists construct knowledge claims and the limitations of these methods."*

in Biology guide, p. 9

*"Structure of the syllabus and conceptual understanding:*
*The biology syllabus comprises four themes, each made up of two concepts. Each theme is a lens through which the syllabus content can be viewed.*

- *Theme A: Unity and diversity*
- *Theme B: Form and function*
- *Theme C: Interaction and interdependence*
- *Theme D: Continuity and change*

*The arrangement of syllabus content follows four levels of biological organization, which also serve as conceptual lenses.*

- *Level 1: Molecules*
- *Level 2: Cells*
- *Level 3: Organisms*
- *Level 4: Ecosystems*

*The content is further arranged into topics, each with two guiding questions as signposts for inquiry. These questions help students view the content of the syllabus through the conceptual lenses of both the themes and the levels of biological organization.*
*The internal assessment requirements are the same for biology, chemistry and physics. The individual investigation should cover a topic that is commensurate with the level of the course of study. Some of the possible tasks include: a hands-on laboratory investigation, using a spreadsheet for analysis and modelling, extracting data from a database and analyzing it graphically, producing a hybrid of spreadsheet/database work with a traditional hands-on investigation, using a simulation provided it is interactive and open-ended."*

in Biology guide, p. 17

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment (80%) | Paper 1 (36%)<br>Paper 2 (44%) | Paper 1 (36%)<br>Paper 2 (44%) |
| Internal Assessment (20%) | Scientific Investigation | Scientific Investigation |

## CHEMISTRY

**Pre-Requisite:** Student should have already studied one semester of Chemistry in Grade 10.

*"What is the purpose of studying chemistry?*
*As one of the three natural sciences in the IB Diploma Programme, chemistry is primarily concerned with identifying patterns that allow us to explain matter at the microscopic level. This then allows us to predict and control matter's behaviour at a macroscopic level. The subject therefore emphasizes the development of representative models and explanatory theories, both of which rely heavily on creative but rational thinking. Given the pattern-seeking nature of chemistry, the development of generalized rules and principles also plays an important part in knowledge production, as do the concrete statements provided by mathematical laws.*

*How is knowledge acquired in chemistry?*
*With its roots in the practice of alchemy, chemistry maintains a strong emphasis on empirical experimentation. However, with advances in technology, it now extends its reach beyond the limits of the human senses at a macroscopic level and into fields such as spectroscopy and computer molecular modelling. Insights from these technologies often require thorough mathematical analysis before being accepted as valid justifications for scientific claims. In all their investigative work, chemists must qualify confidence in their discoveries by considering potential errors related to methodology or limitations in measuring equipment."*

*in Chemistry guide, p.9*

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment (80%) | Paper 1 (36%)<br>Paper 2 (44%) | Paper 1 (36%)<br>Paper 2 (44%) |
| Internal Assessment (20%) | Scientific Investigation | Scientific Investigation |

## PHYSICS

**Pre-Requisite:** No student should study Physics without having studied Algebra II. Physics HL students should also be enrolled in Math HL.

> "To study physics is to attempt to understand the nature of the universe itself. It is the search for answers from how the universe exploded into life in the Big Bang to what the nature of time is itself. Some of the greatest discoveries in history have been made by physicists and these discoveries have revolutionized our world—and physicists are continuing to change the way we think today.
> Physics encompasses everything that we do as human beings. The very meaning of the word is "the study of nature". Indeed, when the discipline was first defined, it was about observing the Milky Way, the entire known universe at the time, while wondering about the existence of the atom. As with the universe, physics knowledge is constantly expanding. The existence of black holes, gravitational forces so strong that even light is unable to escape, was first theorized in the 18th century. In 2019, an image of a black hole was captured for the first time.
> However, physics is not just about staring into the vastness of space or scrutinizing the tiniest particles that make up the fabric of the universe. The fact is that discoveries in physics are the root of ideas that revolutionize the technology used in our daily lives. It is an everyday, grounded science encompassing advances in communication, medical technology and renewable energy.
> It is above all a creative discipline. Physics requires solid knowledge of basic principles and a willingness to put them to the test in new ways. It requires curiosity and an appetite to explore what might be. Creativity is essential to particle physics, cosmology, and to mathematics, and to other fields of science, just as it is to its more widely acknowledged beneficiaries—the arts and humanities." – Lisa Randall
> "Look up at the stars and not down at your feet … Be curious" – Stephen Hawking
>
> in Physics guide, p. 9

> "Structure of the syllabus and conceptual understanding: The structure of this physics syllabus is intended to promote concept-based learning and teaching that can be connected through three concepts: energy, particles and forces. These three concepts appear throughout the physics syllabus in each of the themes.
> There are five organizing themes in the physics syllabus:
>
> A. Space, time and motion
> B. The particulate nature of matter

C. Wave behavior
D. Fields
E. Nuclear and quantum physics

The themes have been chosen to represent the main areas of physics relevant for this level of study and do not suggest a teaching order.

Each of these themes is subdivided into topics. "Space, time and motion" includes the topics of kinematics and rigid body mechanics, "Fields" includes the topics of gravitational fields and induction, "Nuclear and quantum physics" includes the topics of radioactive decay and fission. Each of the topics comprises guiding questions, recommended teaching hours for each level, a list of understandings that students should know, guidance and linking questions.

The topics can be connected through three concepts: energy, particles and forces. Each topic is headed by guiding questions to give a sense of what is covered."

in Physics guide, p. 17

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment (80%) | Paper 1 (36%)<br>Paper 2 (44%) | Paper 1 (36%)<br>Paper 2 (44%) |
| Internal Assessment (20%) | Scientific Investigation | Scientific Investigation |

## COMPUTER SCIENCE (last assessment 2026)

*"The computer science course should aim to:*

1. *provide opportunities for study and creativity within a global context that will stimulate and challenge students developing the skills necessary for independent and lifelong learning*
2. *provide a body of knowledge, methods and techniques that characterize computer science*
3. *enable students to apply and use a body of knowledge, methods and techniques that characterize computer science*
4. *demonstrate initiative in applying thinking skills critically to identify and resolve complex problems*
5. *engender an awareness of the need for, and the value of, effective collaboration and communication in resolving complex problems*
6. *develop logical and critical thinking as well as experimental, investigative and problem-solving skills*
7. *develop and apply the students' information and communication technology skills in the study of computer science to communicate information confidently and effectively*
8. *raise awareness of the moral, ethical, social, economic and environmental implications of using science and technology*

9. *develop an appreciation of the possibilities and limitations associated with continued developments in IT systems and computer science*
10. *encourage an understanding of the relationships between scientific disciplines and the overarching nature of the scientific method."*

in Computer Science guide, p. 8

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment | Paper 1 (45%)<br>Paper 2 (25%) | Paper 1 (40%)<br>Paper 2 (20%)<br>Paper 3 (20%) |
| Internal Assessment | Development of computational solution (30%) | Development of computational solution (20%) |

## COMPUTER SCIENCE (first assessment 2027)

*"What is computer science?*
*Computer science is no more about computers than astronomy is about telescopes (Dijkstra, 1967). Computer science is the study of computers and computational systems. It covers a range of topics related to the theoretical aspects of computing, including algorithms and software design, and the application of computer science to solve practical problems. Computer science is distinct from the natural sciences in that it does not rely on hypothesis and experimentation. Computer science can be considered to be cross-disciplinary, as it draws from a range of disciplines, especially mathematics.*

*How did computer science develop?*
*The foundational concepts of computer science have evolved over centuries, shaped by the ground-breaking contributions of luminaries such as Al-Khwarizmi, Ada Lovelace, Alan Turing, John von Neumann, Grace Hopper and Tim Berners-Lee. The progress of computer science has been a journey from rudimentary mechanical devices to today's advanced electronic machines and sophisticated software systems. Beginning with ancient tools like the abacus for basic arithmetic operations, computing transitioned through ground-breaking inventions such as Charles Babbage's steam-powered Analytical Engine in the 19th century to Alan Turing's theoretical universal computing machine. This in turn inspired John von Neumann and others on the Scientific Advisory Board of the United States government to produce the first working computer, ENIAC. These beginnings have led to a world where computing and computer science applications are essential elements of day-to-day life.*

*What is computational thinking?*

*Computational thinking is the thought processes involved in formulating a problem and expressing its solution(s) in such a way that a computer—human or machine—can effectively carry out (Wing, 2014). In the DP computer science course, students develop computational thinking, a problem-solving technique that can be applied to everyday challenges. Computational thinking is a crucial skill set in the modern digital age, allowing us to tackle problems by leveraging the power of computer processes. As highlighted in the quote by Jeannette Wing, computational thinking does not necessarily involve programming. Rather, it focuses on understanding and solving problems in a manner that a computer could execute."*

in Computer Science guide, p. 6

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment | Paper 1 (35%)<br>Paper 2 (35%) | Paper 1 (40%)<br>Paper 2 (40%) |
| Internal Assessment | Development of computational solution (30%) | Development of computational solution (20%) |

# GROUP 5 Mathematics

## MATHEMATICS: ANALYSIS & APPROACHES (AA)

**Pre-Requisites**: Algebra II

*Students are required to study 5 topics: Number and Algebra, Functions, Geometry and trigonometry, Statistics and Probability, Calculus.*

> *"This course recognizes the need for analytical expertise in a world where innovation is increasingly dependent on a deep understanding of mathematics. This course includes topics that are both traditionally part of a pre-university mathematics course (for example, functions, trigonometry, calculus) as well as topics that are amenable to investigation, conjecture and proof, for instance the study of sequences and series at both SL and HL, and proof by induction at HL. The course allows the use of technology, as fluency in relevant mathematical software and hand-held technology is important regardless of choice of course. However, Mathematics: analysis and approaches has a strong emphasis on the ability to construct, communicate and justify correct mathematical arguments.*
> *Students who choose Mathematics: analysis and approaches at SL or HL should be comfortable in the manipulation of algebraic expressions and enjoy the recognition of patterns and understand the mathematical generalization of these patterns. Students who wish to take Mathematics: analysis and approaches at higher level will have strong algebraic skills and the ability to understand simple proof. They will be students who enjoy spending time with problems and get pleasure and satisfaction from solving challenging problems."*
>
> in Mathematics: Analysis and Approaches guide, p. 8

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment (80%) | Paper 1 (40%)<br>Paper 2 (40%) | Paper 1 (30%)<br>Paper 2 (30%)<br>Paper 3 (20%) |
| Internal Assessment (20%) | Mathematical Exploration | Mathematical Exploration |

## MATHEMATICS: APPLICATIONS & INTERPRETATION (AI)

**Pre-Requisites**: Algebra II

*Students are required to study 5 topics: Number and Algebra, Functions, Geometry and trigonometry, Statistics and Probability, Calculus.*

> *"This course recognizes the increasing role that mathematics and technology play in a diverse range of fields in a data-rich world. As such, it emphasizes the meaning of mathematics in context by focusing on topics that are often used as applications or in mathematical modelling. To give this understanding a firm base, this course also includes topics that are traditionally part of a pre-university mathematics course such as calculus and statistics. The course makes extensive use of technology to allow students to explore and construct mathematical models. Mathematics: applications and interpretation will develop mathematical thinking, often in the context of a practical problem and using technology to justify conjectures. Students who choose Mathematics: applications and interpretation at SL or HL should enjoy seeing mathematics used in real-world contexts and to solve real-world problems. Students who wish to take Mathematics: applications and interpretation at higher level will have good algebraic skills and experience of solving real-world problems. They will be students who get pleasure and satisfaction when exploring challenging problems and who are comfortable to undertake this exploration using technology."*
>
> in Mathematics: Applications and Interpretation guide, p. 8

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment (80%) | Paper 1 (40%)<br>Paper 2 (40%) | Paper 1 (30%)<br>Paper 2 (30%)<br>Paper 3 (20%) |
| Internal Assessment (20%) | Mathematical Exploration | Mathematical Exploration |

# GROUP 6 The Arts

*Note: Group 6 subjects can be replaced by another subject from another group with the exception of Group 5 Mathematics subjects.*

## VISUAL ARTS (last assessment 2026)

**Pre-Requisites**: At least 2 years of Visual Arts (Grades 9 & 10)

> *"The IB Diploma Programme visual arts course encourages students to challenge their own creative and cultural expectations and boundaries. It is a thought-provoking course in which students develop analytical skills in problem-solving and divergent thinking, while working towards technical proficiency and confidence as art-makers. In addition to exploring and comparing visual arts from different perspectives and in different contexts, students are expected to engage in, experiment with and critically reflect upon a wide range of contemporary practices and media. The course is designed for students who want to go on to study visual arts in higher education as well as for those who are seeking lifelong enrichment through visual arts."*
>
> in Visual Arts guide, p. 6

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment (60%) | Part 1 Comparative Study (20%)<br>Part 2 Process Portfolio (40%) | Part 1 Comparative Study (20%)<br>Part 2 Process Portfolio (40%) |
| Internal Assessment (40%) | Exhibition | Exhibition |

## VISUAL ARTS (first assessment 2027)

**Pre-Requisites**: At least 2 years of Visual Arts (Grades 9 & 10)

> *"Visual arts are an integral part of our daily lives. They have social, political, ritual, spiritual, decorative and functional values. They can be persuasive and are sometimes subversive; they are always enlightening or thought-provoking. The theories and practices of visual arts are dynamic and ever-changing, connecting different areas of knowledge and human experience. Visual arts enable us to make sense of the world, to explore our place within it, and to transform our individual and collective ways of being in and with the world. In this visual arts course students learn how to create, communicate and connect as artists.*
> *Students engage in creative practices and processes and learn artmaking as inquiry. Teachers and students can adapt the curriculum to their unique contexts, interests and passions. Together, they transform the classroom into a contemporary visual arts studio. This becomes a collaborative, inclusive, creative and conceptually rich space where students develop their art through personal lines of inquiry that explore and solve open-ended challenges relevant to them.*

*As practicing artists, students experiment with a variety of art-making forms and creative strategies, investigate and connect with past and contemporary artworks, and engage with the world and other people's diverse perspectives. By curating, sharing and exhibiting their artworks, students communicate with a variety of audiences. Inquiry and choice are at the heart of this course, allowing students to pursue their artistic intentions and to create with curiosity, empathy and resilience.*
*The course fosters creativity, communication, critical thinking and collaboration—skills essential in a variety of rapidly evolving fields and professions. Students learn that by making art they are empowered to engage, transform and emerge, both as individuals and as members of a community. These positive and creative approaches will stay with students after they complete the course, enriching any of their future pursuits."*

in Visual Arts guide, p. 7

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment (60%) | Art-making Inquiries<br>Portfolio (40%)<br>Connections study (20%) | Art-making Inquiries<br>Portfolio (30%)<br>Artist project (30%) |
| Internal Assessment (40%) | Resolved Artworks | Resolved Artworks |

## MUSIC

*"In this course, students and teachers engage in a journey of imagination and discovery through partnership and collaboration. Students develop and affirm their unique musical identities while expanding and refining their musicianship. Throughout the course, students are encouraged to explore music in varied and sometimes unfamiliar contexts. Additionally, by experimenting with music, students gain hands-on experience while honing musical skills. Through realizing and presenting samples of their musical work with others, students also learn to communicate critical and artistic intentions and purpose. As students develop as young musicians, the course challenges them to engage practically with music as researchers, performers and creators, and to be driven by their unique passions and interests while also broadening their musical and artistic perspectives."*

in Music guide, p. 7

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment | Exploring Music in Context (Portfolio submission) (30%)<br>Presenting music (Collection of Works Submission) (40%) | Exploring Music in Context (Portfolio submission) (20%)<br>Presenting Music (Collection of Works Submission) (30%) |

| | | |
|---|---|---|
| Internal Assessment | Experimenting with Music Report (30%) | Experimenting with Music Report (20%)<br>Contemporary Music-Maker Submission (30%) |

## THEATRE

*"Theatre is a dynamic, collaborative and live art form. It is a practical subject that encourages discovery through practical inquiry, experimentation, risk taking and the presentation of ideas to others. The IB Diploma Programme theatre course is a multifaceted theatre-making course. It gives students the opportunity to make theatre as creators, designers, directors and performers. It emphasizes the importance of working both individually and as part of an ensemble. It offers the opportunity to engage actively in the creative process of inquiring, developing, presenting and evaluating. Students are encouraged to work as inquisitive and imaginative artists, transforming ideas into action and communicating these to an audience.*

*The basis of theatre is inquiry into the human condition; what makes us human, the actions we take and the stories we tell, how we interact and how we share our visions. Theatre is a form of expressive communication to others, and students are therefore required to think about the responsibilities of theatre-making, considering carefully what they wish to communicate and how to best present their ideas.*

*Theatre students learn to apply research and theory to inform and contextualize their work as they experience the course through practical and physical engagement. They understand that knowledge resides in the body and that research can be conducted physically through both action and practice. In this respect, the theatre course encourages students to appreciate that through the processes of researching, creating, preparing, presenting and critically reflecting on theatre—as participants and spectators—they gain a richer understanding of themselves, their community and the world. Through the study of theatre, students strengthen their awareness of their own personal and cultural perspectives, developing an appreciation of the diversity of theatre practices, their processes and their modes of presentation. This enables students to discover and engage with different forms of theatre across time, place and culture and promotes international-mindedness. Participation in the DP theatre course results in the development of both theatre and life skills; the building of confidence, imagination, creativity and a collaboration mindset."*

in Theatre guide, p. 4

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment | Collaborative Project (40%)<br>Research Presentation (30%) | Collaborative Project (25%)<br>Research Presentation (20%)<br>Solo theatre piece (35%) |
| Internal Assessment | Production proposal (30%) | Production Proposal (20%) |

## FILM

*"The DP film course aims to develop students as proficient interpreters and makers of film texts. Through the study and analysis of film texts, and through practical exercises in film production, the film course develops students' critical abilities and their appreciation of artistic, cultural, historical and global perspectives in film. Students examine film concepts, theories, practices and ideas from multiple perspectives, challenging their own viewpoints and biases in order to understand and value those of others. DP film students experiment with film and multimedia technology, acquiring the skills and creative competencies required to successfully communicate through the language of the medium. They develop an artistic voice and learn how to express personal perspectives through film. The film course emphasizes the importance of working collaboratively. It focuses on the international and intercultural dynamic that triggers and sustains contemporary film, while fostering in students an appreciation of the development of film across time, space and culture. DP film students are challenged to understand alternative views, to respect and appreciate the diverse cultures that exist within film, and to have open and critical minds Film is both a powerful communication medium and an art form. The IB Film course aims to develop students' skills so they can express themselves creatively and artistically through film. Students explore film as an art form in a global context, develop a critical understanding of film theory and history, and cultivate the skills to plan, create, and evaluate their own film work. The course encourages students to appreciate the collaborative nature of filmmaking, and the various roles involved in film production. Students become critically informed viewers and confident, creative filmmakers, learning to communicate meaning through visual and auditory storytelling while engaging with different cultural perspectives."*

in Film guide, p. 8

| Assessment Component | Standard Level (SL) | Higher Level (HL) |
|---|---|---|
| External Assessment | Textual analysis (30%)<br>Comparative Study (30%) | Textual analysis (20%)<br>Comparative Study (20%)<br>Collaborative Film project (35%) |
| Internal Assessment | Film Portfolio (40%) | Film Portfolio (25%) |

# USEFUL CONTACTS

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**IB website** www.ibo.org

CAISL is a student-centered educational community in which we challenge ourselves and each other to do our best and to make positive contributions to our diverse and ever-changing world.