

# Heidelberg International School

## International Baccalaureate Diploma Programme

2026–2028





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# H.I.S. Guiding Statements

## Mission

We, the H.I.S. community, work together to facilitate the intellectual, emotional and social development of our students, to promote international understanding and enable students to make a difference to the world in which they live.

## Philosophy

We believe that education is the key to individuals becoming responsible global citizens. We believe that education should address all aspects of the students' development and that it should value and respect their individuality. The whole staff, parents and students themselves significantly contribute to the growth of the students' intellectual curiosity, understanding, creativity and international mindedness.

## The H.I.S. Definition of International Mindedness

### *A Journey from Self to Other*

Open-mindedness is our constant companion on this journey. We need to develop an active and sensitive frame of mind, a respecting and caring attitude and a desire to know and explore otherness without fear.

With our minds open, we need to be nourished with cumulative experiences that shape our worldview. Through opportunities, which are fully integrated into school life, we become part of a flourishing culture of new perspectives.

We start to demonstrate an understanding of our diversity, by appreciating and respecting ourselves and others, and celebrating our origins and differences.

By connecting and co-operating with others, locally and globally, we begin to realize the interdependence of the natural, cultural and social systems of which we are part.

International mindedness becomes a collaborative commitment to peaceful and sustainable action worldwide.

## Core Values

Respect is a fundamental value of our school, which influences, and is the basis for, the environment of learning at H.I.S. Respect for self and others is an integral part of our community, be it in the way we learn, what we learn, why we learn, where we learn or from whom we learn.

We support respectful learning by encouraging everyone to appreciate and develop the International Baccalaureate Learner Profile ([www.ibo.org](http://www.ibo.org)) attributes by becoming:

- › Inquirers
- › Knowledgeable
- › Thinkers
- › Communicators
- › Principled
- › Open-minded
- › Caring
- › Risk-takers
- › Balanced
- › Reflective

# 1. Subjects to be offered in 2026–2028

## Grade 11 and 12

GROUP 1:	Studies in Language and Literature	English Literature English Language & Literature German Language & Literature
GROUP 2:	Language Acquisition	German B Spanish B* German ab initio Mandarin ab initio* Spanish ab initio* French ab initio*
GROUP 3:	Individuals and Societies	History Business and Management Psychology* Economics* Digital Society* Philosophy*
GROUP 4:	Science	Biology Chemistry Physics Computer Science
GROUP 5:	Mathematics	Mathematics: Analysis and approaches Mathematics: Applications and interpretation
GROUP 6:	The Arts and Electives	Visual Arts Film*  Biology Chemistry Computer Science History Psychology* Business and Management Economics* Digital Society* Philosophy*  German B Spanish B* German ab initio Mandarin ab initio* Spanish ab initio* French ab initio*

\* This is a *Pamoja* Education online course, availability is restricted and extra costs, including 19% sales tax, are incurred.

## 2. The International Baccalaureate Learner Profile

The aim of all IB programmes is to develop internationally minded people who, recognising their common humanity and shared guardianship of the planet, help to create a better and more peaceful world.

### IB learners are:

**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 recognise 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.

### 3. The International Baccalaureate

The International Baccalaureate Diploma Programme (IBDP) is an advanced two-year course of study designed to prepare students for university and life. The IB Diploma Programme founders recognised a need to create a university preparatory curriculum with high standards, which is recognised around the world. Since its inception in 1968, the Diploma Programme has grown to include more than 3,600 schools.

The IB Diploma Programme is more than just a curriculum, it is also a teaching and educational philosophy designed to inspire students to think beyond factual recall of information. The spectrum of IB classes is designed to teach students to think critically, to appreciate the importance of seeing events or knowledge claims from different perspectives, to understand strengths and weaknesses of what students or others claim to “know,” to understand and explore ethical controversies inherently relevant to what they learn, and to be able to apply what they learn in meaningful ways to the “real world”.

While the IB Diploma Programme is not designed exclusively for the elite or gifted academic student, the IB Diploma is most appropriate for those students who are highly motivated, open-minded, and highly responsible. The IB Diploma Programme is much more, however, than a series of academic subjects. Its unique additional features of Creativity, Activity and Service (CAS), Extended Essay (EE) and Theory of Knowledge (TOK) ensure that students are opened up to their community responsibilities, are encouraged to develop their research skills and become independent analytical thinkers.

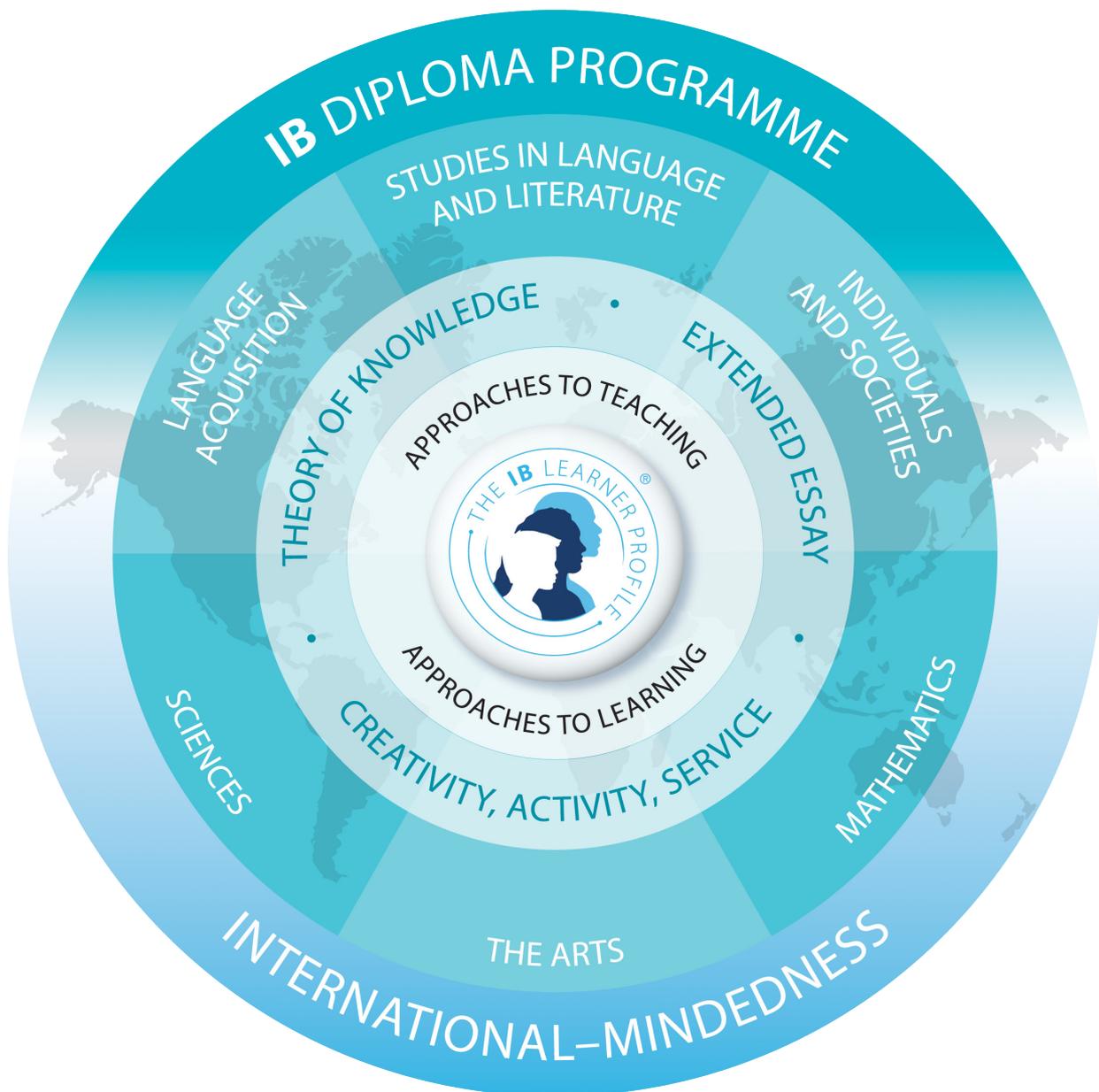


### 3.1. The IB Mission Statement

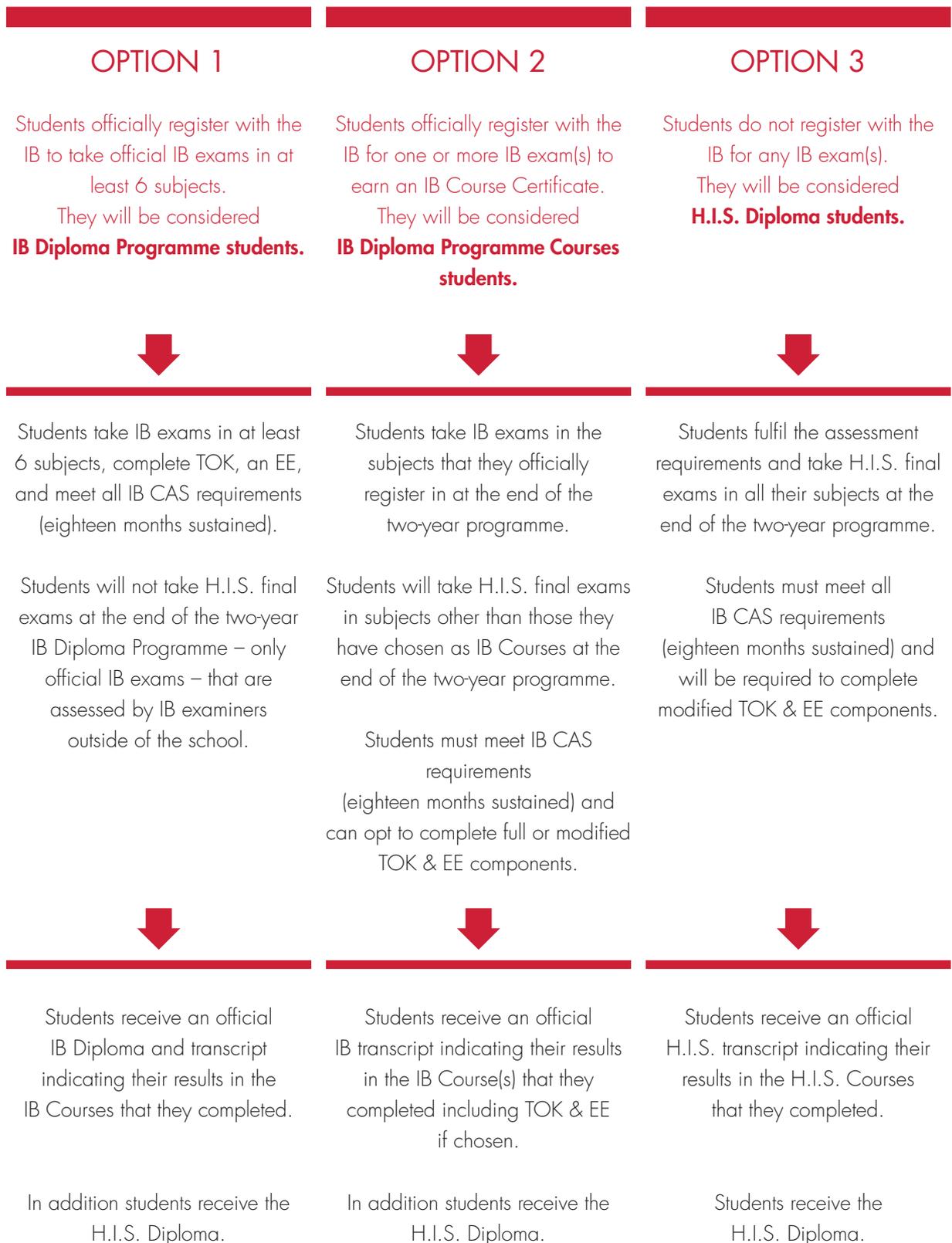
*“ The International Baccalaureate Organization aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.*

*To this end, the IB works with schools, governments and international organizations to develop challenging programmes of international education and rigorous assessment. These programmes encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right. ”*

The IB Diploma programme has the strengths of a traditional and broad curriculum as shown by the graphic below:



## 4. Options for Grade 11/12 Students at H.I.S.



## 5. H.I.S. Diploma Students

Students, who have decided NOT to enrol in either the full IB Diploma Programme or to undertake the IB Courses as a certificate candidate, work towards an H.I.S. Diploma. In addition to completing the requirements of six subject areas as set by their teachers, H.I.S. Diploma candidates will be required to perform eighteen months sustained Creativity, Activity and Service (CAS), they will complete a modified Extended Essay (EE) to a maximum of 1500 words, and will take a modified Theory of Knowledge (TOK) course. The courses at H.I.S. are taught over a two-year period and examinations are undertaken in May in the second year of the programme (Grade 12).

### 5.1. IB Diploma Programme Courses Students

Students who want to earn official recognition for the IB classes but who have decided not to enrol in the full IB Diploma can undertake the IB courses as a Courses Student. These courses can be taken at either the Higher or Standard Level. Courses students may, if they want, choose to take only Standard Level classes. Courses students will be required to perform eighteen months sustained participation in Creativity, Activity and Service (CAS), they will choose to complete either a full or modified Extended Essay and TOK (Theory of Knowledge) course. Like the full-diploma students, courses students can have the official grades earned in their subjects sent to universities directly from the IB. The IB courses at H.I.S. are taught over a two-year period and IB examinations are undertaken in May in the second year of the programme (Grade 12).

### 5.2. IB Diploma Programme Students

Students who pursue the full IB Diploma must complete six examinations: three at Higher Level and three at Standard Level. The IB courses at H.I.S. are taught over a two-year period and IB examinations are undertaken in May in the second year of the programme (Grade 12).

The heart of the full IB diploma includes:

1. The CAS requirement
2. Theory of Knowledge
3. The Extended Essay

**1. CAS Requirement – CAS** is an acronym, which stands for “Creativity, Activity, Service.” CAS is at the heart of the DP. The CAS programme formally begins at the start of the DP and continues regularly for at least 18 months. Both diploma and certificate candidates are required to participate in appropriate activities balanced evenly between the three components. To complete the IB Diploma, students must show evidence of their participation and personal growth through on-going reflections and a final review towards the end of the programme.

**2. Theory of Knowledge – Theory of Knowledge (TOK)** interweaves all the IB subject areas, distinguishes between how knowledge is acquired in each area, and explores the difference between truth and belief. The course emphasises a great deal of critical thinking, personal reflection and stresses the importance of seeing events from multiple perspectives. TOK does not have a formal IB examination, but candidates will submit a final TOK essay and make an oral presentation that will be internally and externally moderated.

**3. Extended Essay – The Extended Essay (EE)** is a required analytic paper of 4000 words. The EE is intended to promote high-level research and writing skills, intellectual discovery and creativity. It provides students with an opportunity to engage in personal research in topics of their own choice (chosen from the list of approved Diploma Programme subjects), under the guidance of a supervisor (a teacher in school).

**Award of Diploma points:** the EE contributes to the overall IB Diploma score through the award of points in conjunction with TOK. A maximum of three bonus points are awarded according to student's combined performance in both the EE and TOK. Both the EE and TOK are measured against published assessment criteria. According to the quality of the work, and based on the application of these assessment criteria, a student's performance in each of the EE and TOK will fall into one of the following five bands:

- A** = Work of an excellent standard
- B** = Work of a good standard
- C** = Work of a satisfactory standard
- D** = Work of a mediocre standard
- E** = Work of an elementary standard
- N** = If candidates do not comply all IB assessment requirements, then no grade will be awarded

The total number of points awarded is determined by the combination of the performance levels achieved by the student in both the EE and TOK according to the following matrix.

<b>THEORY OF KNOWLEDGE</b>							
	<b>GRADE</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	No grade <b>N</b>
<b>EXTENDED ESSAY</b>	<b>A</b>	3	3	2	2	Failing condition	Failing condition
	<b>B</b>	3	2	2	1	Failing condition	Failing condition
	<b>C</b>	2	2	1	0	Failing condition	Failing condition
	<b>D</b>	2	1	0	0	Failing condition	Failing condition
	<b>E</b>	Failing condition					
	No grade <b>N</b>	Failing condition					

# 6. The Structure of the IB Diploma Programme at H.I.S.

## 6.1. Programme Structure

Full-diploma candidates complete the “core” requirements of the Programme: The Extended Essay, Theory of Knowledge, and CAS. Diploma candidates must take six courses from four, five or six subject areas, referred to as “groups”. Three of these classes must be chosen at the Higher Level (HL) and three at Standard Level (SL). In addition, diploma students must take the Theory of Knowledge class. The diagram below shows core components and the IB courses and the courses within the six subject groups offered at H.I.S.



**IMPORTANT:** Some courses may not be offered due to insufficient student enrollment. In addition, it is not always possible to accommodate all course selections due to scheduling conflicts. Every effort will be made to accommodate student preferences, when possible.

\* This is an online course, availability is restricted and extra costs are incurred.



## 6.2. Pamoja Education – IB Online Courses

Online courses delivered by Pamoja Education are developed under the IB's rigorous quality assurance standards, cover the same course content and prepare students for the same assessments as a traditional face-to-face IB Diploma Programme course. These online courses give students a wider choice of subjects than the traditional class-based subjects available at H.I.S. Pamoja Education is the only provider approved by the IB to teach Diploma Programme courses online.

### Subjects available\*

- › Spanish B SL
- › Spanish ab initio SL
- › French ab initio SL
- › Mandarin ab initio SL
- › Economics HL and SL
- › Digital Society HL and SL
- › Philosophy SL
- › Psychology HL and SL
- › Film SL

*\*The full Diploma Programme cannot be completed online.*

### Diploma Programme courses online:

- › are two years in duration
- › follow IB course guides
- › meet IB course requirements
- › are formally assessed in the same way as face-to-face courses
- › are taught in accordance with The Diploma Programme: From principles into practice
- › embed theory of knowledge (TOK) into the courses
- › feature practice examinations to prepare students for IB external examinations
- › are taught by experienced IB teachers, who have special training in online pedagogy
- › require approximately the same amount of study time as face-to-face higher and standard level courses.

Empowering the learner is a key feature of the online courses. In online classrooms of approximately 25 students from around the world, teachers introduce weekly lessons, guide discussion and provide feedback to stimulate critical thinking and promote "lifelong learning" habits. IB Diploma Programme courses online offer a truly international, interactive model of teaching and learning.

### Course tuition fees

For Standard Level courses, 1610€ in year 1 and 1691€ in year 2; for Higher Level courses, 1691€ in year 1 and 1775€ in year 2. At Standard Level, all Group 2 subjects and Film are 1735€ in year 1 and 1822€ in year 2. At Higher Level, all Group 2 subjects and Film are 1822€ in year 1 and 1913€ in year 2. For students moving schools during their programme, a one-off additional transfer fee of 440€ is charged.

Course fees are correct at the time of publication, but are subject to change.

All prices are subject to 19% sales tax. More information is available at [www.pamojaeducation.com](http://www.pamojaeducation.com)

## 7. Distinctions between Standard Level and Higher Level Classes

Whether a student pursues the full IB Diploma or IB courses, students will usually have a certain amount of choice whether they take each class at Higher Level (HL) or Standard Level (SL).

The exact difference in terms of content, standards, and requirements of class taken at the SL or HL varies between subjects in the IB curriculum. In some subjects, Higher Level and Standard Level vary substantially in degree of difficulty and material covered. However, for most IB subjects, the levels differ primarily in the amount of material covered rather than degree of difficulty.

SL courses require approximately 150 class hours while HL courses require approximately 240 class hours. In practice, SL students have additional in-school study time, cover fewer units, or have fewer demands in regard to their internal assessment. Students who pursue any course at the Higher Level should do so because they have a particular aptitude or high-level of motivation in this class.

In making the final decision about the level of coursework, students need to carefully balance their interests and abilities with projected university entrance requirements.



## 8. Components of an IB Course: Internal Assessment (IA) and IB Exams

### 8.1. Internal Assessment (20–30% of the Course Grade)

The IB curriculum requires that students complete a major “project” in each IB Course they take. Such projects are formally called Internal Assessments (IA) because they are assessed “internally” by the subject teachers.

Regardless of the type of project, students are asked to apply the knowledge and skills they are learning in the class to this assignment. To ensure consistency, IA projects are also “moderated”. This means that while the individual teacher is responsible for grading and assessing the students work, the IB randomly requests samples of this work to be examined by IB examiners who check to see that teachers are applying the correct grading criteria. This step is essentially a “safeguard” to ensure that teacher-grading practices are consistent with IB standards. The moderation process is an important part of maintaining consistency, fairness, high

standards, and accountability in the IB DP. The IA requirement also serves to lessen the relative impact of the examination at the end of the course. Students who are not necessarily good test-takers may excel at the IA project, thereby helping to help balance any unexpected exam results.

## 8.2. External Assessment – IB Exams (70–80% of the Course Grade)

From April to May of the second year of the IB Diploma/Courses Programme, students will undertake IB exams. IB exams are comprehensive; they are usually based on two years worth of teaching materials. Therefore, they require a great deal of revision and preparation by the student. These exams are created by the IB and sent by courier to each IB school. The exams themselves are “externally assessed” (graded) by trained examiners, throughout the world, based upon published grading criteria.

# 9. Results for IB Diploma Students

In order to achieve the IB Diploma a candidate must fulfil certain requirements; at its most basic a candidate must achieve at least 24 points from their combined grades in six subjects, together with their grades for theory of knowledge and the extended essay, and also complete the Creativity, Activity, Service (CAS) element. However, to ensure a diploma reflects sufficient breadth in achievement across subjects and the core there are nine particular requirements stated in the articles of the IB’s General regulations: Diploma Programme:

1. CAS requirements have been met.
2. Candidate’s total points are 24 or more.
3. An N has not been given for theory of knowledge, extended essay or for a contributing subject.
4. A grade E has not been awarded for one or both of theory of knowledge and the extended essay.
5. There is no grade 1 awarded in a subject/level.
6. There are no more than two grade 2s awarded (HL or SL).
7. There are no more than three grade 3s or below awarded (HL or SL).
8. Candidate has gained 12 or more points on HL subjects  
(for candidates who register for four HL subjects, the three highest grades count).
9. Candidate has gained 9 or more points on SL subjects  
(candidates who register for two SL subjects must gain at least 5 points at SL).

### Agreement between the IB and the German Conference of Culture Ministers (KMK)

All IB Diploma holders who wish to study in Germany are required to obtain state recognition of the IB Diploma as Abitur equivalent; the agreement between the IB and German authorities stipulates that students must take:

- › one advanced language (Group 1)
- › a second language at Group 1 or Group 2 level;
- › one natural science (Biology, Chemistry, Physics);
- › one mathematics course;
- › one social science;
- › one additional subject.

Further, one of the higher level subjects must be a language, science, or maths course.

The full text of the agreement in German (official) and in an unofficial translation are available on the H.I.S. website.

# 10. Course Information for Subjects Offered

## 10.1. Group 1 – Studies in Language and Literature Literature SL & HL – English

The Literature course introduces students to the analysis of literary texts. It is the course through which the IB's policy of mother-tongue entitlement is delivered.

The course is organized into three areas of exploration and seven central concepts, and focuses on the study of literary works. Together, the three areas of exploration of the course add up to a comprehensive exploration of literature from a variety of cultures, literary forms and periods. Students learn to appreciate the artistry of literature, and develop the ability to reflect critically on their reading, presenting literary analysis powerfully through both oral and written communication.

### Key features

- › Available at higher and standard levels
- › Higher level study requires a minimum of 240 class hours, while standard level study requires a minimum of 150 class hours
- › Students study at least 10 works at higher level and at least 7 works at standard level from a representative selection of literary forms, periods and places
- › Students develop the ability to engage in close, detailed analysis of literary works, building understanding of the techniques involved in literary criticism
- › The study of literary works in context is emphasised, and through the study of literature in translation the student is challenged to reflect on the role of cultural assumptions in interpretation
- › Students are assessed through a combination of formal examination and oral and written coursework
- › The formal examination comprises two essay papers, one requiring the analysis of a passage of unseen literary text, and the other comparative response to a question based on two works studied
- › Students also perform an oral activity presenting their analysis of two works studied
- › HL students comply with an additional written coursework requirement which consists of writing a 1200–1500 word essay on one of the works studied

### Course description and aims

The language A: Literature course aims at exploring the various manifestations of literature as a particularly powerful mode of writing across cultures and throughout history. The courses aim at developing an understanding of factors that contribute to the production and reception of literature—the creativity of writers and readers, the nature of their interaction with their respective contexts and with literary tradition, the ways in which language can give rise to meaning and/or effect, and the performative and transformative potential of literary creation and response. Through close analysis of a range of literary texts in a number of literary forms and from different times and places, 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.

**The aims of studies in both the Literature and Language and Literature courses are to enable students to:**

- › engage with a range of texts, in a variety of media and forms, from different periods, styles and cultures
- › develop skills in listening, speaking, reading, writing, viewing, presenting and performing
- › develop skills in interpretation, analysis and evaluation
- › develop sensitivity to the formal and aesthetic qualities of texts and an appreciation of how they contribute to diverse responses and open up multiple meanings

- › develop an understanding of relationships between texts and a variety of perspectives, cultural contexts, and local and global issues, and an appreciation of how they contribute to diverse responses and open up multiple meanings
- › develop an understanding of the relationships between studies in language and literature and other disciplines
- › communicate and collaborate in a confident and creative way
- › foster a lifelong interest in and enjoyment of language and literature.

CURRICULUM MODEL OVERVIEW	CLASS HOURS	
Syllabus Component	SL	HL
Readers, writers and texts	50	80
Time and space	50	80
Intertextuality: connecting texts	50	80
<b>Total Class hours</b>	<b>150</b>	<b>240</b>

### Assessment model

It is the intention of these courses that students are able to fulfil the following assessment objectives:

#### Know, understand and interpret:

- › a range of texts, works and/or performances, and their meanings and implications
- › contexts in which texts are written and/or received
- › elements of literary, stylistic, rhetorical, visual and/or performance craft
- › features of particular text types and literary forms.

#### Analyse and evaluate:

- › ways in which the use of language creates meaning
- › uses and effects of literary, stylistic, rhetorical, visual or theatrical techniques
- › relationships among different texts
- › ways in which texts may offer perspectives on human concerns.

#### Communicate:

- › ideas in clear, logical and persuasive ways
- › in a range of styles, registers and for a variety of purposes and situations.



## ASSESSMENT AT A GLANCE

Type of assessment	Format of assessment	Time in hours (Weighting in %)	
		SL	HL
<b>External</b>			
Paper 1: Guided literary analysis	For SL students, one guided analysis of a previously unseen literary extract (choice of two); for HL students two guided analyses of a previously unseen literary extracts or texts.	1.25 (35%)	2.25 (35%)
Paper 2: Comparative essay	Comparative essay based on two literary works written in response to a choice of one out of four questions.	1.75 (35%)	1.75 (25%)
HL Essay	Written coursework component: 1,200–1,500 word essay on one work studied.		(20%)
<b>Internal</b>			
Individual Oral	Prepared oral response on the way that one work originally written in the language studied and one work studied in translation have approached a common global issue.	(30%)	(20%)

## Language and Literature SL & HL – English and German

The language and literature course introduces the critical study and interpretation of written and spoken texts from a wide range of literary forms and non-literary text-types. The formal analysis of texts is supplemented by awareness that meaning is not fixed but can change in respect to contexts of production and consumption. The course is organized into three areas of exploration and seven central concepts, and focuses on the study of both literary or non-literary texts. Together, the three areas of exploration of the course allow the student to explore the language A in question through its cultural development and use, its media forms and functions, and its literature. Students develop skills of literary and textual analysis, and also the ability to present their ideas effectively. A key aim is the development of critical literacy.

### Key features

- › Available at higher and standard levels
- › Higher level study requires a minimum of 240 class hours, while standard level study requires a minimum of 150 class hours
- › Students study least 6 works at higher level and least 4 works at standard level from a representative selection of literary forms, periods and places
- › Students study a range of non-literary texts and bodies of work that include a wide variety of text-types
- › Students develop the techniques needed for the critical analysis of communication, becoming alert to interactions between text, audience and purpose
- › An understanding of how language, culture and context determine the construction of meaning is developed through the exploration of texts, some of which are studied in translation, from a variety of cultures, periods, text-types and literary forms
- › Students are assessed through a combination of formal examinations and oral and written coursework and oral activities
- › The formal examination comprises two essay papers, one requiring the analysis of unseen non-literary texts, and the other a comparative response to a question based on two literary works studied

- › Students also perform an oral activity presenting their analysis of a literary work and a non-literary body of work studied
- › HL students comply with an additional written coursework requirement which consists of writing a 1200 - 1500 word essay on one of the works or bodies of work studied.

### Course description and aims

Through close analysis of a range of literary texts in a number of literary forms and from different times and places, 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.

The aims of studies in the Language and Literature course is to enable students to:

- › engage with a range of texts, in a variety of media and forms, from different periods, styles and cultures
- › develop skills in listening, speaking, reading, writing, viewing, presenting and performing
- › develop skills in interpretation, analysis and evaluation
- › develop sensitivity to the formal and aesthetic qualities of texts and an appreciation of how they contribute to diverse responses and open up multiple meanings
- › develop an understanding of relationships between texts and a variety of perspectives, cultural contexts, and local and global issues, and an appreciation of how they contribute to diverse responses and open up multiple meanings
- › develop an understanding of the relationships between studies in language and literature and other disciplines
- › communicate and collaborate in a confident and creative way
- › foster a lifelong interest in and enjoyment of language and literature.

### Course Content

CURRICULUM MODEL OVERVIEW	CLASS HOURS	
Syllabus Component	SL	HL
Readers, writers and texts	50	80
Time and space	50	80
Intertextuality: connecting texts	50	80
<b>Total Class hours</b>	<b>150</b>	<b>240</b>

### Assessment model

It is the intention of these courses that students are able to fulfil the following assessment objectives:

#### Know, understand and interpret:

- › a range of texts, works and/or performances, and their meanings and implications
- › contexts in which texts are written and/or received
- › elements of literary, stylistic, rhetorical, visual and/or performance craft
- › features of particular text types and literary forms.

#### Analyse and evaluate:

- › ways in which the use of language creates meaning
- › uses and effects of literary, stylistic, rhetorical, visual or theatrical techniques
- › relationships among different texts
- › ways in which texts may offer perspectives on human concerns.

**Communicate:**

- › ideas in clear, logical and persuasive ways
- › in a range of styles, registers and for a variety of purposes and situations

<b>ASSESSMENT AT A GLANCE</b>			
Type of assessment	Format of assessment	Time in hours (Weighting in %)	
		SL	HL
<b>External</b>			
Paper 1: Guided literary analysis	Guided analysis of unseen literary passage/ passages from different text types.	1.25 (35%)	2.25 (35%)
Paper 2: Comparative essay	Comparative essay based on two literary works written in response to a choice of one out of four questions.	1.75 (35%)	1.75 (25%)
HL Essay	Written coursework component: 1,200–1,500 word essay on one work studied.		(20%)
<b>Internal</b>			
Individual Oral	Prepared oral response on the way that one work originally written in the language studied and one work studied in translation have approached a common global issue.	(30%)	(20%)

## 10.2. Group 2 – Language acquisition

### Language ab Initio German – Standard Level

### French\* – Standard Level

### Spanish\* – Standard Level

### Mandarin\* – Standard Level

Language acquisition consists of two modern language courses, language ab initio and language B, designed to provide students with the necessary skills and intercultural understanding to enable them to communicate successfully in an environment where the language studied is spoken.

Offered at SL only, language ab initio is a language acquisition course designed for students with no previous experience in—or very little exposure to—the target language.

Language ab initio students develop their receptive, productive and interactive skills while learning to communicate in the target language in familiar and unfamiliar contexts.

Students develop the ability to communicate through the study of language, themes and texts. There are five prescribed themes: identities, experiences, human ingenuity, social organization and sharing the planet. While the themes are common to both language ab initio and language B, the language ab initio syllabus additionally prescribes four topics for each of the five themes, for a total of 20 topics that must be addressed over the two years of the course. The following are the language acquisition aims of ab initio courses.

- › Develop international-mindedness through the study of languages, cultures, and ideas and issues of global significance.
- › Enable students to communicate in the language they have studied in a range of contexts and for a variety of purposes.
- › Encourage, through the study of texts and through social interaction, an awareness and appreciation of a variety of perspectives of people from diverse cultures.
- › Develop students' understanding of the relationship between the languages and cultures with which they are familiar.
- › Develop students' awareness of the importance of language in relation to other areas of knowledge.
- › Provide students, through language learning and the process of inquiry, with opportunities for intellectual engagement and the development of critical- and creative-thinking skills.
- › Provide students with a basis for further study, work and leisure through the use of an additional language.
- › Foster curiosity, creativity and a lifelong enjoyment of language learning.

### Curriculum model overview

The curriculum is organized around five prescribed themes and 20 prescribed topics with which the students engage through written, audio, visual and audio-visual texts.

Students develop into successful, effective communicators by considering the conceptual understandings of context, audience, purpose, meaning and variation.

Communication is evidenced through receptive, productive and interactive skills.

### Assessment model

The language acquisition assessment objectives are essential to language ab initio.

- › Communicate clearly and effectively in a range of contexts and for a variety of purposes.
- › Understand and use language appropriate to a range of interpersonal and/or intercultural contexts and audiences.
- › Understand and use language to express and respond to a range of ideas with fluency and accuracy.
- › Identify, organize and present ideas on a range of topics.
- › Understand, analyse and reflect upon a range of written, audio, visual and audio-visual texts.

LANGUAGE AB INITIO SL ASSESSMENT OUTLINE		WEIGHTING
External 75%	Paper 1 (productive skills) Two written tasks—each from a choice of three Writing—30 marks	25%
	Paper 2 (receptive skills) Separate sections for listening and reading Listening—25 marks Reading—40 marks	25% 25%
Internal 25%	Individual oral assessment 30 marks	25%

## Assessment at a Glance

THEME	GUIDING PRINCIPLE	PRESCRIBED TOPICS	POSSIBLE QUESTIONS
Identities	Explore the nature of the self and how we express who we are.	Personal attributes Personal relationships Eating and drinking Physical well-being	How do I present myself to others? How do I express my identity? How do I achieve a balanced and healthy lifestyle?
Experiences	Explore and tell the stories of the events, experiences and journeys that shape our lives.	Daily routine Leisure Holidays Festivals and celebrations	How does travel broaden our horizons? How would my life be different if I lived in another culture? What are the challenges of being a teenager? How are customs and traditions similar or different across cultures?
Human ingenuity	Explore the ways in which human creativity and innovation affect our world.	Transport Entertainment Media Technology	How do science and technology affect my life? How do I use media in my daily life? What can I learn about a culture through entertainment?
Social organization	Explore the ways in which groups of people organize themselves, or are organized, through common systems or interests.	Neighbourhood Education The workplace Social issues	What purpose do rules and regulations have in society? What is my role in society? What options do I have in the world of work?
Sharing the planet	Explore the challenges and opportunities faced by individuals and communities in the modern world.	Climate Physical geography The environment Global issues	What can I do to help the environment? How do my surroundings affect the way I live? What can I do to make the world a better place?

## 10.2. Group 2 – Language acquisition

### Language B

#### German B: Higher Level and Standard Level

#### Spanish B\*: Standard Level

Language acquisition consists of two modern language courses— language ab initio and language B—designed to provide students with the necessary skills and intercultural understanding to enable them to communicate successfully in an environment where the language studied is spoken.

Language B is a language acquisition course designed for students with some previous experience of the target language. Students further develop their ability to communicate through the study of language, themes and texts. There are five prescribed themes: identities, experiences, human ingenuity, social organization and sharing the planet.

Both language B SL and HL students learn to communicate in the target language in familiar and unfamiliar contexts. The distinction between language B SL and HL can be seen in the level of competency the student is expected to develop in receptive, productive and interactive skills.

At HL the study of two literary works originally written in the target language is required and students are expected to extend the range and complexity of the language they use and understand in order to communicate. Students continue to develop their knowledge of vocabulary and grammar, as well as their conceptual understanding of how language works, in order to construct, analyse and evaluate arguments on a variety of topics relating to course content and the target language culture(s).

**The following language acquisition aims are common to both language ab initio and language B.**

- › Develop international-mindedness through the study of languages, cultures, and ideas and issues of global significance.
- › Enable students to communicate in the language they have studied in a range of contexts and for a variety of purposes.
- › Encourage, through the study of texts and through social interaction, an awareness and appreciation of a variety of perspectives of people from diverse cultures.
- › Develop students' understanding of the relationship between the languages and cultures with which they are familiar.
- › Develop students' awareness of the importance of language in relation to other areas of knowledge.
- › Provide students, through language learning and the process of inquiry, with opportunities for intellectual engagement and the development of critical- and creative-thinking skills.
- › Provide students with a basis for further study, work and leisure through the use of an additional language.
- › Foster curiosity, creativity and a lifelong enjoyment of language learning.

### Curriculum model overview

The curriculum is organized around five prescribed themes with which the students engage through written, audio, visual and audio-visual texts.

Students develop into successful, effective communicators by considering the conceptual understandings of context, audience, purpose, meaning and variation.

Communication is evidenced through receptive, productive and interactive skills.

## Assessment model

- › The language acquisition assessment objectives are essential to language ab initio.
- › Communicate clearly and effectively in a range of contexts and for a variety of purposes.
- › Understand and use language appropriate to a range of interpersonal and/or intercultural contexts and audiences.
- › Understand and use language to express and respond to a range of ideas with fluency and accuracy.
- › Identify, organize and present ideas on a range of topics.
- › Understand, analyse and reflect upon a range of written, audio, visual and audio-visual texts.

The assessment outlines for language B SL and HL are identical; it is the nature of the assessment that differs and this is what distinguishes SL assessments from those of HL.

For language B HL paper 1, the tasks set will require more complex language and structures and demand higher-order thinking skills. Additionally for HL, a higher word range has been provided in order to accommodate the more complex responses required.

For the individual oral internal assessment, the stimulus at language B SL is a visual image that is clearly relevant to one (or more) of the themes of the course. The stimulus at language B HL is an excerpt from one of the two literary works studied.

LANGUAGE B SL AND HL ASSESSMENT OUTLINE		WEIGHTING
External 75%	Paper 1 (productive skills) Two written tasks—each from a choice of three Writing—30 marks	25%
	Paper 2 (receptive skills) Separate sections for listening and reading Listening—25 marks Reading—40 marks	25% 25%
Internal 25%	Individual oral assessment 30 marks	25%



## Assessment at a Glance

THEME	GUIDING PRINCIPLE	PRESCRIBED TOPICS	
Identities	Explore the nature of the self and what it is to be human.	<ul style="list-style-type: none"> <li>› Lifestyles</li> <li>› Health and well-being</li> <li>› Beliefs and values</li> </ul>	<ul style="list-style-type: none"> <li>› Subcultures</li> <li>› Language and identity</li> </ul>
Experiences	Explore and tell the stories of the events, experiences and journeys that shape our lives.	<ul style="list-style-type: none"> <li>› Leisure activities</li> <li>› Holidays and travel</li> <li>› Life stories</li> </ul>	<ul style="list-style-type: none"> <li>› Rites of passage</li> <li>› Customs and traditions</li> <li>› Migration</li> </ul>
Human ingenuity	Explore the ways in which human creativity and innovation affect our world.	<ul style="list-style-type: none"> <li>› Entertainment</li> <li>› Artistic expressions</li> <li>› Communication and media</li> </ul>	<ul style="list-style-type: none"> <li>› Technology</li> <li>› Scientific innovation</li> </ul>
Social organization	Explore the ways in which groups of people organize themselves, or are organized, through common systems or interests.	<ul style="list-style-type: none"> <li>› Social relationships</li> <li>› Community</li> <li>› Social engagement</li> </ul>	<ul style="list-style-type: none"> <li>› Education</li> <li>› The working world</li> <li>› Law and order?</li> </ul>
Sharing the planet	Explore the challenges and opportunities faced by individuals and communities in the modern world.	<ul style="list-style-type: none"> <li>› The environment</li> <li>› Human rights</li> <li>› Peace and conflict</li> </ul>	<ul style="list-style-type: none"> <li>› Globalization</li> <li>› Ethics</li> <li>› Urban and rural environment</li> </ul>

### 10.3. Group 3 – Individuals & Societies History: Higher Level and Standard Level

#### Course description and aims

DP history is a dynamic, evidence-based, interpretative discipline that engages with the past.

The overarching emphasis of the DP history course is on teaching students to think historically. This means engaging students in different forms of historical inquiry. The course allows students to explore the past through a variety of contexts, concepts, content and skills. In this interpretative discipline, students will engage with diverse perspectives and evidence to reach their own judgements.

The DP history course is a world history course, grounded in a variety of global, regional and national themes, and allowing for a mixture of comparative, thematic and in-depth studies. It provides a balance of structure and flexibility, enabling the course to be implemented in a wide range of contexts.

History is both an academic discipline and a part of the everyday, lived experience of all students. History informs identity, culture, society, politics, and the relationships between individuals and communities.

Through the course, students will develop an understanding and appreciation of history in all these dimensions.

All individuals and societies subjects help young people develop a connection to our shared planet, exploring how to live sustainably and promoting the well-being of all people in our pursuit of a more peaceful world.

The aims of all the individuals and societies subjects are to equip students to:

- › explore and critically engage with multiple perspectives and ways of thinking
- › investigate and evaluate the interactions between individuals and societies
- › think and act as informed and principled individuals in societies
- › understand and value the variety and diversity of the human experience across time and place.

In the DP history course, students will:

- › inquire into the past through historical contexts, concepts, content and skills
- › investigate historical events, issues and topics
- › explore and evaluate diverse historical perspectives and arguments
- › examine diverse historical identities and experiences.

### Curriculum model overview

The curriculum model integrates contexts, concepts, content and skills through historical inquiry (figure 1).

At the centre of the curriculum model is historical inquiry. Historical inquiry should be understood as an active, student-centred process of constructing meaning about the past. Students are invited not simply to “study history”, but to “do history”.

All the parts of the curriculum model are interconnected, both with each other and with historical inquiry. These parts are as follows.

- › Contexts situate content in different ways. The history course uses four inquiry contexts to scaffold the course content, enabling the study of diverse topics in different ways. These include the focused study, thematic study, regional study and historical investigation.
- › Concepts focus historical inquiry with powerful, pervasive and debatable ideas. The history course has four specified historical concepts: cause and consequence, continuity and change, perspectives, and significance.
- › Content informs historical inquiry with detail and examples. Teachers and students can choose content from a wide range of options, based on their needs and interests.
- › Skills support historical inquiry with practical processes. The history course highlights a variety of historical skills.



SYLLABUS COMPONENT	TEACHING HOURS	
	SL	HL
<b>Focused study</b> Select one of the five following options. Each option contains two focused studies, both of which must be studied. <ul style="list-style-type: none"> <li>› Independence and identity</li> <li>› Political and economic transitions</li> <li>› Conflict and displacement</li> <li>› Climate and innovation</li> <li>› Protest and change</li> </ul>	50	50
<b>Thematic study</b> Select one of the four following options. <ul style="list-style-type: none"> <li>› Conflict (from 750 CE)</li> <li>› Innovation and transformation (from 750 CE)</li> <li>› Authoritarian rule (from 1750 CE)</li> <li>› Popular movements (from 1750 CE)</li> </ul>	80	80
<b>Regional study: Europe (HL only)</b> Two studies from the chosen region.	–	90
<b>Historical investigation</b> Internal assessment	20	20
<b>Total teaching hours</b>	<b>150</b>	<b>240</b>

### Assessment model

The course assesses students' knowledge and understanding, application and analysis, and evaluation and synthesis of six different elements of the course.

#### These elements are:

- › historical inquiry contexts
- › historical concepts
- › historical sources
- › historical content
- › historical arguments
- › historical inquiry questions.

The following table shows how the different elements of the course are assessed in different ways. It also shows, in parentheses, the assessment component (paper 1, paper 2, paper 3 or the internal assessment [IA]) that is associated with each assessment objective.

ELEMENT	KNOWLEDGE AND UNDERSTANDING	APPLICATION AND ANALYSIS	EVALUATION AND SYNTHESIS
Historical inquiry contexts	Know and understand historical inquiry contexts (paper 1, paper 2, paper 3, IA)	Apply historical inquiry contexts (paper 1, paper 2, paper 3, IA)	
Historical concepts	Know and understand historical concepts (paper 1, paper 2, paper 3, IA)	Apply historical concepts (paper 1, paper 2, paper 3, IA) and analyse concepts (paper 2)	
Historical sources	Understand content from historical sources (paper 1, IA)	Analyse context of historical sources (paper 1, IA)	Evaluate and synthesize perspectives of historical sources (paper 1, IA)
Historical content	Know and understand historical content (paper 2, paper 3, IA)	Apply and analyse historical content (paper 2, paper 3, IA)	Synthesize historical content (paper 2)
Historical arguments	Understand historical arguments (paper 1, paper 2, paper 3, IA)	Analyse historical arguments (paper 2, paper 3, IA)	Evaluate and synthesize historical arguments (paper 3)
Historical inquiry questions	Understand historical inquiry questions (paper 1, paper 2, paper 3, IA)	Analyse historical inquiry questions (paper 1, paper 2, paper 3, IA)	Formulate an appropriate historical inquiry question (IA)

In some ways, the table demonstrates how the objectives of the course are progressive and build upon each other. For example, it would be difficult to evaluate a source if you did not first understand the source. However, it does not necessarily follow that the last column is inherently more complex or challenging than earlier columns. To “understand” a concept is a demanding cognitive challenge, and to apply it even more so. It is better to see these ways of thinking about various parts of the course as interconnected and interdependent.

### Paper 1

In paper 1, students are assessed on their understanding of the content of two historical sources in relation to an inquiry question (question 1), their analysis of how the context of a source shapes how it can be used (question 2), and their synthesis of the perspectives from diverse historical sources (question 3). In all their responses, students will need to apply knowledge and understanding from the relevant focused study.

### Paper 2

In paper 2, section A, students are assessed on their analysis of historical concepts, illustrated with an understanding of a relevant historical example from their thematic study. In section B, part 1, they are assessed on their understanding of a historical example from their thematic study. In section B,

part 2, they are assessed on their synthesis of diverse historical examples from their thematic study to formulate an analytical argument. In all their responses, students will need to apply knowledge and understanding from their thematic study.

### Paper 3 (HL only)

In paper 3, students will need to show an in-depth understanding of the argument in the question. They will be assessed on their evaluation of historical perspectives to formulate an evaluative argument. Students will need to apply knowledge and understanding from the regional study.

### Internal assessment

In section 1 of the IA, students are assessed on their formulation of an appropriate question to guide their historical investigation. In section 2, they are assessed on their analysis of the sources they have chosen. In section 3, students must synthesize evidence from the sources to produce a response. Students will need to apply knowledge and understanding from their chosen topic.

## ASSESSMENT AT A GLANCE

Type of assessment	Format of assessment	Time in hours (Weighting in %)	
		SL	HL
<b>External</b>		<b>3.0 (70%)</b>	<b>5.0 (80%)</b>
Paper 1 (24 marks)	Source-based assessment on the five focused studies, linked by an overarching inquiry question. Students respond to three static questions. Students answer all the questions for one of the focused studies.	1.25 (30%)	1.25 (20%)
Paper 2 (25 marks)	Section A: two questions on the specified concepts. Students choose one question to answer. Section B: two questions on each of the four thematic studies. Each question consists of two parts—a short response and an essay response. Students choose one of the two questions for their thematic study and answer both parts of that question.	1.75 (40%)	1.75 (25%)
Paper 3 (30 marks)	Separate papers for each of the four regions. Two essay questions on each of the 12 regional studies within the selected region. Students choose to answer two questions, each from a different regional study.	HL only	2 (35%)
<b>Internal</b>		<b>20 (30%)</b>	<b>20 (20%)</b>
Historical investigation (24 marks)	This component is internally assessed by the teacher and externally moderated by the IB at the end of the course. Students investigate a historical topic of their choice. They formulate an inquiry question, identify and choose sources, synthesize information and evaluate sources to produce a response.	20 (30%)	20 (20%)

## Sample questions

### Paper 1

Using the three provided sources on post-Second World War displacement in Europe and considering the overarching inquiry question of “To what extent was persecution the main reason for post-war mass displacement in Europe?”, respond to the following three questions.

1. Explain how the content of both source A and source B can be used to answer the inquiry question.
2. Analyse how the context of source C influences how it can be used to answer the inquiry question.
3. Examine how the perspectives in all the sources can be used to answer the inquiry question.

### Paper 2

#### Section A

Analyse how historical events can have multiple causes. Use one example from your thematic study to support your response.

Analyse how historical events can be seen from different perspectives. Use one example from your thematic study to support your response.

#### Section B

Part A: Explain how conflict can affect the experience of a marginalized group. Use one example from your thematic study in your response.

Part B: To what extent has the mobilization of resources been the most important factor in determining the outcome of conflict? Use examples from at least two different conflicts in at least two regions to support your response.

### Paper 3 (HL only)

- › To what extent do you agree with the claim that papal patronage was the most significant factor in the development of the Italian Renaissance?
- › “The Mexican Revolution significantly changed the role of women.” To what extent do you agree with this statement?
- › To what extent do you agree with the perspective that the African National Congress (ANC) adopted armed struggle because of the Sharpeville Massacre?
- › “The main reason for the outbreak of war in Korea in 1950 was contrasting views on free elections.”
- › To what extent do you agree with this claim?

## Group 3 – Individuals and Societies

### Business Management: Higher Level and Standard Level

#### Course description and aims

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.

Business management is a challenging and dynamic discipline that more than meets the needs of our students growing and developing in a complex business environment. This course prepares students to be global citizens ready to face up to the challenges and opportunities awaiting them in our ever-changing world.

#### The aims of the DP business management course are to enable students to:

- › develop as confident, creative and compassionate business leaders, entrepreneurs, social entrepreneurs and as change agents
- › foster an informed understanding of ethical and sustainable business practices
- › explore the connections between individuals, businesses and society
- › engage with decision-making as a process and a skill.



## Curriculum model overview

SYLLABUS COMPONENT	RECOMMENDED HOURS	
	SL	HL
<b>Syllabus Content</b>	150	240
<b>Unit 1: Introduction to business management</b> 1.1 What is a business? 1.2 Types of business entities 1.3 Business objectives 1.4 Stakeholders 1.5 Growth and evolution 1.6 Multinational companies (MNCs)	20	20
<b>Unit 2: Human resource management</b> 2.1 Introduction to human resource management 2.2 Organizational structure 2.3 Leadership and management 2.4 Motivation and demotivation 2.5 Organizational (corporate) culture (HL only) 2.6 Communication 2.7 Industrial/employee relations (HL only)	20	35
<b>Unit 3: Finance and accounts</b> 3.1 Introduction to finance 3.2 Sources of finance 3.3 Costs and revenues 3.4 Final accounts 3.5 Profitability and liquidity ratio analysis 3.6 Debt/equity ratio analysis (HL only) 3.7 Cash flow 3.8 Investment appraisal 3.9 Budgets (HL only)	30	45
<b>Unit 4: Marketing</b> 4.1 Introduction to marketing 4.2 Marketing planning 4.3 Sales forecasting (HL only) 4.4 Market research 4.5 The seven Ps of the marketing mix 4.6 International marketing (HL only)	30	35
<b>Unit 5: Operations management</b> 5.1 Introduction to operations management 5.2 Operations methods 5.3 Lean production and quality management (HL only) 5.4 Location 5.5 Break-even analysis 5.6 Production planning (HL only) 5.7 Crisis management and contingency planning (HL only) 5.8 Research and development (HL only) 5.9 Management information systems (HL only)	15	45
<b>Business management toolkit</b> <b>Research time allocated for the pre-released statement in paper 1</b> <b>Internal assessment</b>	10 5 20	35 5 20

## Assessment model

By the end of the business management course, students are expected to achieve the following assessment objectives.

### Assessment Objective 1:

Knowledge and understanding Demonstrate knowledge and understanding of:

- › business management tools and theories
- › course topics and concepts
- › business problems, issues and decisions
- › HL extension topics (HL only).

### Assessment Objective 2:

Application and analysis Apply and analyse:

- › business management tools and theories
- › course topics and concepts
- › business problems, issues and decisions
- › business decisions and issues through the selection and use of appropriate data
- › HL extension topics (HL only).

### Assessment Objective 3:

Synthesis and evaluation Synthesize and evaluate:

- › business management tools and theories
- › course topics and concepts
- › business problems, issues and decisions
- › stakeholder interests to reach informed business decisions
- › recommendations for competing future strategic options (HL only)
- › HL extension topics (HL only).

### Assessment Objective 4:

Use and application of appropriate skills:

- › select and apply relevant business management tools, theories and concepts to support research into a business issue or problem
- › select, interpret and analyse business materials from a range of primary and secondary sources
- › create well-structured materials using business management terminology
- › communicate analysis, evaluation and conclusions of research effectively.

**ASSESSMENT AT A GLANCE**

Type of assessment	Format of assessment	Time in hours (Weighting in %)	
		SL	HL
<b>External</b>		<b>3 (70%)</b>	<b>4.5 (80%)</b>
Paper 1	Based on a pre-released statement that specifies the context and background for the unseen case study	1.5 (35%)	1.5 (25%)
Paper 2	Based on unseen stimulus material with a quantitative focus	1.5 (35%)	1.75 (30%)
Paper 3	Based on unseen stimulus material about a social enterprise	HL only	1.25 (25%)
<b>Internal</b>		<b>30%</b>	<b>20%</b>
Business research project	Students produce a research project about a real business issue or problem facing a particular organization using a conceptual lens	30%	20%

**Sample questions****Paper 1**

Explain one advantage and one disadvantage for MT of being a small business.  
Discuss whether Jackie should accept or reject KC's offer to buy MT.

**Paper 2**

Using the data provided in Table 7, other information in the stimulus, and a Boston Consulting Group (BCG) matrix, recommend to QS which e-scooter model should be removed from QS's portfolio in order for the company to remain profitable.

**Paper 3 (HL only)**

Using all the resources provided and your knowledge of business management, recommend a possible plan of action to ensure the sustainability of SML for the next five years.

**Group 3 – Individuals & Societies****Digital Society\*: Higher Level and Standard Level****Course description and aims**

Digital society is an interdisciplinary course within the individuals and societies subject group. The course is designed for young people interested in exploring the impact and importance of digital systems and technologies in the contemporary world. Digital society is intended to appeal to a broad range of teachers in the social studies, media, humanities, IT and related subject areas.

The course integrates concepts, content and contexts through inquiry.

**Concepts** such as expression, space and identity highlight powerful, pervasive and debatable perspectives that provide insight for inquiry.

**Content** informs inquiry with details about digital systems including areas related to data, algorithms, media, AI, robotics and more.

**Contexts** situate inquiry into areas significant to life in digital society including social, cultural and environmental contexts.

In addition, HL students consider important contemporary challenges and digital interventions.

The course aims support standard level (SL) and higher level (HL) students on their inquiry journey as they:

**Focus** inquiry using course concepts, content and contexts as well as real-world examples;

**Explore** diverse sources relevant to digital society;

**Investigate** impacts and implications of digital systems for people and communities;

**Reflect** on emerging trends, future developments and further insights;

**Share** discoveries about digital society with others.

## Curriculum model overview

The recommended teaching time is 150 hours to complete the SL course and 240 hours to complete the HL course. Students and teachers enjoy a great deal of freedom to personalize and integrate the required course components as outlined below.

COMPONENT		
Introduction		
1.1 What is digital society?		
<b>Concepts</b> 2.1 Change 2.2 Expression 2.3 Identity 2.4 Power 2.5 Space 2.6 Systems 2.7 Values and ethics	<b>Content</b> 3.1 Data 3.2 Algorithms 3.3 Computers 3.4 Networks and the internet 3.5 Media 3.6 Artificial intelligence 3.7 Robots and autonomous technologies	<b>Contexts</b> 4.1 Cultural 4.2 Economic 4.3 Environmental 4.4 Health 4.5 Human knowledge 4.6 Political 4.7 Social
<b>Inquiry Project (internal assessment)</b> An inquiry project into impacts and implications of digital systems for people and communities. The requirements are common to SL and HL students.	<b>HL extension: challenges and interventions</b> 5.1 Global well-being 5.2 Governance and human rights 5.3 Sustainable development	

## Assessment model

Having followed the digital society course, students are expected to demonstrate the following assessment objectives.

### Understand, apply, analyse, evaluate and synthesize:

- › course topics, enduring understandings and areas for inquiry;
- › real-world examples involving digital systems;
- › claims and perspectives of diverse sources;
- › impacts and implications of digital systems for people and communities;
- › emerging trends and future developments;
- › challenges and interventions in digital society (HL only).

**Develop and refine digital society skills including:**

- › managing inquiry projects through planning, documentation and feedback;
- › researching using diverse and relevant sources;
- › thinking in critical and creative ways;
- › communicating in multiple modes and media.

<b>ASSESSMENT AT A GLANCE</b>		<b>Time in hours (Weighting in %)</b>	
<b>Type of assessment</b>	<b>Format of assessment</b>	<b>SL</b>	<b>HL</b>
<b>External</b>		<b>2.75 (70%)</b>	<b>4.75 (80%)</b>
Paper 1	Questions that address the syllabus and real-world examples in an integrated way. In the HL extension, students also address challenges and interventions.	1.50 (40%)	2.25 (35%)
Paper 2	Source-based questions that address the syllabus in an integrated way.	1.25 (30%)	1.25 (20%)
Paper 3 HL only	Questions that address an intervention related to an HL extension challenge outlined in pre-released brief.		1.25 (25%)
<b>Internal</b>		<b>30 (30%)</b>	<b>30 (20%)</b>
Inquiry project	A project into the impacts and implications of a chosen digital system for people and communities. Project is submitted with an inquiry process document, a recorded multi-media presentation and a list of references.	30 (30%)	30 (20%)

### **Group 3 – Individuals & Societies Economics\*: Higher Level and Standard Level**

#### **Course description and aims**

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 DP 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 using models and theories. The DP economics course allows students to explore these models and theories, and apply them, using empirical data, through the examination of six real-world issues.

As economic growth and increased efficiency become prominent goals, two other important global economic issues related to these goals are; the ways in which economic activity impacts the environment, and the challenges facing the world in terms of fair access to resources, goods and services. When exploring these significant global issues, sustainability and equity become key concepts for DP economic students to understand. In all areas of economic activity, the economic agents can be divided up into the private sector (consumers and producers) and the public sector (governments). To different extents and with different outcomes, the public sector in any economy assumes some responsibility for monitoring and regulating the behaviour of the private sector. This government intervention is a significant concept that appears throughout the course and students are expected to critically evaluate the balance between the market forces of the private sector and intervention by governments.

Given the rapidly changing world, economic activity and its outcomes are constantly in flux. Therefore, students are encouraged, throughout the course, to research current real-world issues. Through their own inquiry, it is expected that students will be able to appreciate both the values and limitations of economic models in explaining real-world economic behaviour and outcomes.

By focusing on the six real-world issues through the nine key concepts (scarcity, choice, efficiency, equity, economic well-being, sustainability, change, interdependence and intervention), students of the DP economics course will develop the knowledge, skills, values and attitudes that will encourage them to act responsibly as global citizens.

For the internal assessment, both standard level and higher level candidates are required to produce a portfolio of three commentaries based on published extracts from the news media using the key concepts as a lens. In addition, for the external assessment, there are two examinations for standard level students and three examinations at higher level.



## Curriculum model overview

There are four assessment objectives for the DP economics course. Having followed the course at HL, students will be expected to meet the following objectives:

**Assessment objective 1: Knowledge and understanding**

**Assessment objective 2: Application and analysis**

**Assessment objective 3: Synthesis and evaluation**

**Assessment objective 4: Use and application of appropriate skills**

## Curriculum model overview

COMPONENTS	RECOMMENDED HOURS	
	SL	HL
<b>Unit 1: Introduction to economics</b> 1.1 What is economics? 1.2 How do economists approach the world?	10	10
<b>Unit 2: Microeconomics</b> 2.1 Demand 2.2 Supply 2.3 Competitive market equilibrium 2.4 Critique of the maximizing behaviour of consumers and producers 2.5 Elasticity of demand 2.6 Elasticity of supply 2.7 Role of government in microeconomics 2.8 Market failure—externalities and common pool or common access resources 2.9 Market failure—public goods 2.10 Market failure—asymmetric information (HL) 2.11 Market failure—market power (HL) 2.12 The market's inability to achieve equity (HL)	35	70
<b>Unit 3: Macroeconomics</b> 3.1 Measuring economic activity and illustrating its variations 3.2 Variations in economic activity— aggregate demand and aggregate supply 3.3 Macroeconomic objectives 3.4 Economics of inequality and poverty 3.5 Demand management (demand-side policies)—monetary policy 3.6 Demand management—fiscal policy 3.7 Supply-side policies	40	75
<b>Unit 4: The global economy</b> 4.1 Benefits of international trade 4.2 Types of trade protection 4.3 Arguments for and against trade control/ protection 4.4 Economic integration 4.5 Exchange rates 4.6 Balance of payments 4.7 Sustainable development 4.8 Measuring development 4.9 Barriers to economic growth and/or economic development 4.10 Economic growth and/or economic development strategies	45	65
<b>Internal assessment</b> Portfolio of three commentaries	20	20

## Sample Questions

### Paper 1

Explain two tools open to a central bank to conduct expansionary monetary policy.

Using real-world examples, evaluate the effectiveness of monetary policy to achieve low unemployment.

### Paper 2

Using an exchange rate diagram, explain how the increase in the interest rate by the Nigerian central bank might prevent the continued fall in the value of the naira.

### Paper 3

Using the data provided, and your knowledge of economics, recommend a policy that could be introduced by the government of Country X in response to the expected fall in the world price of coffee.

## 10.3. Group 3 – Individuals & Societies Psychology\*: Higher Level and Standard Level

### Course description and aims

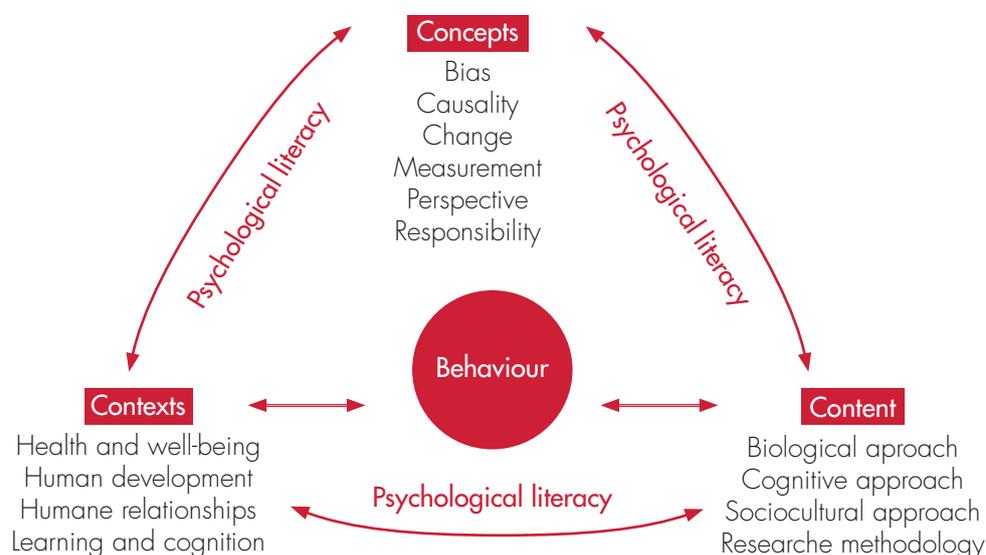
The Diploma Programme (DP) psychology course aims to develop students' knowledge and understanding of psychological concepts, content and contexts, as well as the models and theories associated with these areas. Through the course, students will develop the ability to engage in critical thinking, assess evidence and acknowledge the evolving nature of knowledge. They will acquire the ability to seek new 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.

### The aims of the psychology course are for students to:

- › develop knowledge and understanding of psychological concepts, content and contexts including models and theories
- › think critically and creatively about behaviour and cognitive processes
- › engage with problems facing individuals, groups and societies using psychological understanding and skills.

### Curriculum model overview

The DP psychology course focus is on conceptual understanding and the ability to apply concepts across a variety of contexts as opposed to simple memorization of theories supporting studies. Framing the psychology course through concepts, content and context allows for the development and application of psychological knowledge when studying the contexts.



Concepts, content and contexts are meant to be integrated when investigating human behaviour. The content provides the psychological terminology and theories needed to understand how the biological, cognitive and sociocultural approaches assist in understanding behaviour in different contexts while using a variety of research methodology. Concepts provide a framework through which specific content is considered and contexts provide the real-world setting in which concepts and content are applied.

Standard level (SL) and higher level (HL) students will investigate four contexts using psychological content and concepts relevant to that area of study. The internal assessment will require SL and HL students to create a research proposal to investigate a topic with a population of interest. Reading empirical research and everyday claims in the media are opportunities to identify concepts and further the knowledge of psychological content applied within a context. Students will be required to think critically about data analysis and interpretation in psychological research and everyday claims (for example, in social media). HL students will have the opportunity to study four extensions: the role of culture, motivation and technology in shaping human behaviour, and data analysis and interpretation.

SYLLABUS COMPONENT	TEACHING HOURS	
	SL	HL
Concepts, content and contexts	100	100
Integrating concepts and content in the understanding of contexts Class practicals (minimum 4)	30	30
Extensions (HL only) The role of culture, motivation and technology in shaping human behaviour	–	45
Data analysis and interpretation	–	45
<b>Internal assessment</b> Psychology research proposal to investigate a topic in relation to a specified population of interest.	20	20
<b>Total teaching hours</b>	150	240

### Assessment model

By the end of the psychology course at SL or at HL, students will be expected to demonstrate the following.

#### Knowledge and understanding (AO1)

- › A range of psychological concepts, contexts, theories, models and examples
- › Biological, cognitive and sociocultural approaches to understanding human behaviour
- › Research methodology for understanding human behaviour

#### Application and analysis (AO2)

- › Explain and formulate arguments in response to a specific question or prompt using relevant/appropriate concepts and psychological research
- › Apply and analyse a range of psychological theories and models
- › Apply and analyse knowledge relevant to psychology in a variety of contexts HL
- › Interpret data to draw conclusions for experimental and non-experimental research

#### Synthesis and evaluation (AO3)

- › Evaluate psychological theories and research
- › Draw conclusions from different types of evidence
- › Justify a position and critique claims
- › Discuss how psychological concepts interact
- › Design a study to investigate a research question HL
- › Draw conclusions about the influence of culture, motivation and technology on human behaviour

Assessment objective	Paper 1 – SL and HL			Paper 2 – SL and HL		Paper 3 (HL only)	Internal assessment
	Section A	Section B	Section C	Section A	Section B		
AO1 – knowledge and understanding	✓		✓	✓	✓		
AO2 – application and analysis	✓	✓		✓		✓	
AO3 – synthesis and evaluation			✓	✓	✓	✓	✓

ASSESSMENT AT A GLANCE		Time in hours (Weighting in %)	
Type of assessment	Format of assessment	SL	HL
<b>External</b>		<b>3.0 (70%)</b>	<b>5.0 (80%)</b>
Paper 1 (24 marks)	Source-based assessment on the five focused studies, linked by an overarching inquiry question. Students respond to three static questions. Students answer all the questions for one of the focused studies.	1.50 (35%)	1.25 (25%)
Paper 2 (25 marks)	Section A: two questions on the specified concepts. Students choose one question to answer. Section B: two questions on each of the four thematic studies. Each question consists of two parts—a short response and an essay response. Students choose one of the two questions for their thematic study and answer both parts of that question.	1.50 (35%)	1.75 (25%)
Paper 3 (30 marks)	Separate papers for each of the four regions. Two essay questions on each of the 12 regional studies within the selected region. Students choose to answer two questions, each from a different regional study.	HL only	2.0 (30%)
<b>Internal</b>		<b>20 (30%)</b>	<b>20 (20%)</b>
Historical investigation (24 marks)	This component is internally assessed by the teacher and externally moderated by the IB at the end of the course. Students investigate a historical topic of their choice. They formulate an inquiry question, identify and choose sources, synthesize information and evaluate sources to produce a response.	20 (30%)	20 (20%)

## Sample questions

### Paper 1: Concepts, contexts and content

Section A: Two short-answer questions designed to assess knowledge and content from two of the three content areas (biological, cognitive, sociocultural).

Biological approach to understanding human behaviour

1. Describe how one chemical messenger plays a role in one human behaviour. (4 marks)

Cognitive approach to understanding human behaviour

2. Explain anchoring bias with reference to one example of human behaviour. (4 marks)

Section B: Two compulsory short answer questions that are designed to assess the student's ability to apply knowledge to a new situation or in a new scenario.

3. With reference to this study, explain the role of models in the study of cognitive processes. (6 marks)

4. Explain how social learning theory could be used to achieve this goal. (6 marks)

Section C: Two concept-based extended response questions, each from a different context. Students will choose one of the two questions to answer.

5. In the context of human development, evaluate one or more strategies used by developmental psychologists to measure theory of mind.

6. One claim in health and well-being psychology is that one perspective is not enough to explain mental health. Discuss this claim with reference to one biological explanation of one or more disorders.

### Paper 2: Research methodology

Section A: Four compulsory questions that focus on the class practicals.

1a. Describe how you used an interview or focus group in your class practical. (4 marks)

1b. Explain the concept of bias in relation to your interview or focus group class practical. (4 marks)

1c. Compare and contrast the use of an interview or focus group used in your class practical with an experiment. (6 marks)

1d. Design an observation to investigate the same topic as you investigated in your class practical. (6 marks)

Section B: An experiment or non-experimental study from one of the contexts is provided as stimulus material for which students discuss applying two or more concepts.

2. Discuss the following study with reference to two or more of the following concepts: bias, causality, measurement, and/or responsibility. (15 marks)

### Paper 3 (HL only): Source-based questions

Students will be presented with 4–6 sources with research from one of the HL extension topics. Questions will be on the interpretation of graphs, data analysis, research considerations and a synthesis of the sources.

1. Explain one issue that limits the interpretation of the data in source 1. (3 marks)

2. Analyse the findings from source 2 and state a conclusion linked to the claim that use of technology in education may have a negative effect on the mental health of students. (6 marks)

3. Discuss how the researcher could improve the credibility of the findings in source 3. (6 marks)

4. To what extent can we conclude that the use of technology in education may have a negative effect on the mental health of students? (15 marks)

## Group 3 – Individuals & Societies Philosophy\*: Standard Level

### Course description and aims

The philosophy course provides an opportunity for students to engage with some of the world's most interesting and influential thinkers. It also develops highly transferable skills such as the ability to formulate arguments clearly, to make reasoned judgments and to evaluate highly complex and multifaceted issues. The emphasis

of the DP philosophy course is on “doing philosophy”, that is, on actively engaging students in philosophical activity. The course is focused on stimulating students’ intellectual curiosity and encouraging them to examine both their own perspectives and those of others.

Students are challenged to develop their own philosophical voice and to grow into independent thinkers. They develop their skills through the study of philosophical themes and the close reading of a philosophical text. They also learn to apply their philosophical knowledge and skills to real-life situations and to explore how non-philosophical material can be treated in a philosophical way. Teachers explicitly teach thinking and research skills such as comprehension, text analysis, transfer, and use of primary sources.

**The aim of the philosophy course is to engage students in philosophical activity, enabling them to:**

- › develop an inquiring and intellectually curious way of thinking
- › formulate arguments in a sound and purposeful way
- › examine critically their own experiences and their ideological and cultural perspectives
- › appreciate the diversity of approaches within philosophical thinking
- › apply their philosophical knowledge and skills to the world around them.

### Curriculum model overview

COMPONENTS	CLASS HOURS
<b>Core theme</b> The core theme “Being human” is compulsory for all students.	50
<b>Optional themes</b> Students are required to study one theme from the following list. <ol style="list-style-type: none"> <li>1. Aesthetics</li> <li>2. Epistemology</li> <li>3. Ethics</li> <li>4. Philosophy and contemporary society</li> <li>5. Philosophy of religion</li> <li>6. Philosophy of science</li> <li>7. Political philosophy</li> </ol>	40
<b>Prescribed text</b> Students are required to study one text from the “IB list of prescribed philosophical texts”.	40
<b>Internal assessment</b> Students are required to produce a philosophical analysis of a non-philosophical stimulus.	20

### Assessment model

There are four assessment objectives for the DP philosophy course. Having followed the course, students will be expected to demonstrate the following:

#### Knowledge and understanding

Demonstrate knowledge and understanding of philosophical concepts, issues and arguments.  
 Identify the philosophical issues present in both philosophical and non-philosophical stimuli.

#### Application and analysis

Analyse philosophical concepts, issues and arguments.  
 Analyse the philosophical issues present in both philosophical and non-philosophical stimuli. Explain and analyse different approaches to philosophical issues, making use of relevant supporting evidence/examples.

**Synthesis and evaluation**

Evaluate philosophical concepts, issues and arguments. Construct and develop relevant, balanced and focused arguments.

Discuss and evaluate different interpretations or points of view.

**Selection, use and application of appropriate skills and techniques**

Demonstrate the ability to produce clear and well-structured written responses.

Demonstrate appropriate and precise use of philosophical vocabulary.

In the internal assessment task, demonstrate evidence of research skills, organization and referencing.

**ASSESSMENT AT A GLANCE**

Type of assessment	Format of assessment	Time (hours)	Grade percentage (%)
<b>External</b>		<b>2.75</b>	<b>75</b>
Paper 1	Stimulus-based questions on core theme and essay questions on optional themes.	1.75	50
Paper 2	Questions on prescribed philosophical texts.	1	25
<b>Internal</b>		<b>20</b>	<b>25</b>
Analysis	Students are required to complete a philosophical analysis of a non-philosophical stimulus.	20	25

**Sample questions**

To what extent do you agree with the claim that character-based approaches are more useful in making moral decisions than consequence-based approaches? (Paper 1)

Evaluate the claim that social networking technologies are fundamentally changing the nature of social interactions and relationships. (Paper 1)

Part a.) Explain Plato's distinction between knowledge, belief and ignorance.

Part b.) Discuss the viability of these distinctions. (Paper 2)

## 10.4. Group 4 – Sciences

### Biology: Higher Level and Standard Level

#### Course description and aims

As one of the three natural sciences in the IB Diploma Programme, biology is primarily concerned with the study of life and living systems. Biologists attempt to make sense of the world through a variety of approaches and techniques, controlled experimentation and collaboration between scientists. At a time of global introspection on human activities and their impact on the world around us, developing and communicating a clear understanding of the living world has never been of greater importance than it is today.

Through the study of DP biology, students are empowered to make sense of living systems through unifying themes. By providing opportunities for students to explore conceptual frameworks, they are better able to develop understanding and awareness of the living world around them. This is carried further through a study of interactions at different levels of biological organization, from molecules and cells to ecosystems and the biosphere. Integral to the student experience of the DP biology course is the learning that takes place through scientific inquiry. With an emphasis on experimental work, teachers provide students with opportunities to ask questions, design experiments, collect and analyse data, collaborate with peers, and reflect, evaluate and communicate their findings.

DP biology enables students to constructively engage with topical scientific issues. Students examine scientific knowledge claims in a real-world context, fostering interest and curiosity. By exploring the subject, they develop understandings, skills and techniques which can be applied across their studies and beyond.

**Through the overarching theme of the nature of science, the course aims to enable students to:**

- › develop conceptual understanding that allows connections to be made between different areas of the subject, and to other DP sciences subjects
- › acquire and apply a body of knowledge, methods, tools and techniques that characterise science
- › develop the ability to analyse, evaluate and synthesize scientific information and claims
- › develop the ability to approach unfamiliar situations with creativity and resilience
- › design and model solutions to local and global problems in a scientific context
- › develop an appreciation of the possibilities and limitations of science
- › develop technology skills in a scientific context
- › develop the ability to communicate and collaborate effectively
- › develop awareness of the ethical, environmental, economic, cultural and social impact of science.

#### Curriculum model overview

The DP biology course promotes concept-based teaching and learning to foster critical thinking.

**The DP biology course is built on:**

- › approaches to learning
- › nature of science
- › skills in the study of biology.

These three pillars support a broad and balanced experimental programme. As students progress through the course, they become familiar with traditional experimentation techniques, as well as the application of technology. These opportunities help them to develop their investigative skills and evaluate the impact of error and uncertainty in scientific inquiry. The scientific investigation then places a specific emphasis on inquiry-based skills and the formal communication of scientific knowledge. Finally, the collaborative sciences project extends the development of scientific communication in a collaborative and interdisciplinary context, allowing students to work together beyond the confines of biology.

SYLLABUS COMPONENT	Recommended Hours	
	SL	HL
<b>Syllabus Content</b>	110	180
<b>Unity and diversity</b> <ul style="list-style-type: none"> <li>› Water</li> <li>› Nucleic acids</li> <li>› Origins of cells *</li> <li>› Cell structure</li> <li>› Viruses *</li> <li>› Diversity of organisms</li> <li>› Classification and cladistics *</li> <li>› Evolution and speciation</li> <li>› Conservation of biodiversity</li> </ul>	19	33
<b>Form and function</b> <ul style="list-style-type: none"> <li>› Carbohydrates and lipids</li> <li>› Proteins</li> <li>› Membranes and membrane transport</li> <li>› Organelles and compartmentalization</li> <li>› Cell specialization</li> <li>› Gas exchange</li> <li>› Transport</li> <li>› Muscle and motility *</li> <li>› Adaptation to environment</li> <li>› Ecological niches</li> </ul>	26	39
<b>Interaction and interdependence</b> <ul style="list-style-type: none"> <li>› Enzymes and metabolism</li> <li>› Cell respiration</li> <li>› Photosynthesis</li> <li>› Chemical signalling *</li> <li>› Neural signalling</li> <li>› Integration of body systems</li> <li>› Defence against disease</li> <li>› Populations and communities</li> <li>› Transfer of energy and matter</li> </ul>	31	48

SYLLABUS COMPONENT	Recommended Hours	
	SL	HL
<b>Continuity and change</b> <ul style="list-style-type: none"> <li>› DNA replication</li> <li>› Protein synthesis</li> <li>› Mutations and gene editing</li> <li>› Cell and nuclear division</li> <li>› Gene expression *</li> <li>› Water potential</li> <li>› Reproduction</li> <li>› Inheritance</li> <li>› Homeostasis</li> <li>› Natural selection</li> <li>› Sustainability and change</li> <li>› Climate change</li> </ul>	34	60
<b>Experimental Programme</b>	<b>40</b>	<b>60</b>
Practical work	20	40
Collaborative sciences project	10	10
Scientific investigation	10	10

\*Topics with content that should only be taught to HL students

### Skills in the study of biology

The skills and techniques students must experience through the course are encompassed within the tools. These support the application and development of the inquiry process in the delivery of the biology course.

#### Tools

- › Experimental techniques
- › Technology
- › Mathematics

#### Inquiry process

- › Exploring and designing
- › Collecting and processing data
- › Concluding and evaluating

Teachers are encouraged to provide opportunities for students to encounter and practise the skills throughout the programme. Rather than being taught as stand-alone topics, these skills should be integrated into the teaching of the syllabus when they are relevant to the syllabus topics being covered.

## Assessment model

There are four assessment objectives for the DP biology course. Having followed the biology course, students are expected to demonstrate the following assessment objectives.

### Assessment objective 1

Demonstrate knowledge of:

- › terminology, facts and concepts
- › skills, techniques and methodologies.

### Assessment objective 2

Understand and apply knowledge of:

- › terminology and concepts
- › skills, techniques and methodologies.

### Assessment objective 3

Analyse, evaluate, and synthesize:

- › experimental procedures
- › primary and secondary data
- › trends, patterns and predictions.

### Assessment objective 4

Demonstrate the application of skills necessary to carry out insightful and ethical investigations.

## ASSESSMENT AT A GLANCE

Type of assessment	Format of assessment	Time (hours)		Grade percentage (%)
External		SL	HL	80
Paper 1	Paper 1A: Multiple-choice questions Paper 1B: Data-based questions (four questions that are syllabus related, addressing all themes)	1.5	2	36
Paper 2	Data-based and short-answer questions Extended-response questions	1.5	2.5	44
Internal		10		20
Analysis	The scientific investigation is an open-ended task in which the student gathers and analyses data in order to answer their own formulated research question. The outcome of the scientific investigation will be assessed through the form of a written report. The maximum overall word count for the report is 3,000 words.	10		20

## Group 4 – Sciences

### Chemistry: Higher Level and Standard Level

#### Course description and aims

As one of the three natural sciences in the IB Diploma Programme, chemistry is primarily concerned with identifying patterns that help to explain matter at the microscopic level. This then allows matter's behaviour to be predicted and controlled 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. DP chemistry enables students to constructively engage with topical scientific issues. Students examine scientific knowledge claims in a real-world context, fostering interest and curiosity. By exploring the subject, they develop understandings, skills and techniques which can be applied across their studies and beyond. Integral to the student experience of the DP chemistry course is the learning that takes place through scientific inquiry both in the classroom and the laboratory.

**Through the overarching theme of the nature of science, the course aims to enable students to:**

- › develop conceptual understanding that allows connections to be made between different areas of the subject, and to other DP sciences subjects
- › acquire and apply a body of knowledge, methods, tools and techniques that characterise science
- › develop the ability to analyse, evaluate and synthesize scientific information and claims
- › develop the ability to approach unfamiliar situations with creativity and resilience
- › design and model solutions to local and global problems in a scientific context
- › develop an appreciation of the possibilities and limitations of science
- › develop technology skills in a scientific context
- › develop the ability to communicate and collaborate effectively
- › develop awareness of the ethical, environmental, economic, cultural and social impact of science.

#### Curriculum model overview

The DP chemistry course promotes concept-based teaching and learning to foster critical thinking.

The DP chemistry course is built on:

- › approaches to learning
- › nature of science
- › skills in the study of chemistry.

These three pillars support a broad and balanced experimental programme. As students progress through the course, they become familiar with traditional experimentation techniques, as well as the application of technology. These opportunities help them to develop their investigative skills and evaluate the impact of error and uncertainty in scientific inquiry. The scientific investigation then places a specific emphasis on inquiry-based skills and the formal communication of scientific knowledge. Finally, the collaborative sciences project extends the development of scientific communication in a collaborative and interdisciplinary context, allowing students to work together beyond the confines of chemistry.

SYLLABUS COMPONENT	Recommended Hours	
	SL	HL
Syllabus Content	110	180
<b>Structure 1. Models of the particulate nature of matter</b> Structure 1.1—Introduction to the particulate nature of matter Structure 1.2—The nuclear atom Structure 1.3—Electron configurations Structure 1.4—Counting particles by mass: The mole Structure 1.5—Ideal gases	17	21
<b>Structure 2. Models of bonding and structure</b> Structure 2.1—The ionic model Structure 2.2—The covalent model Structure 2.3—The metallic model Structure 2.4—From models to materials	20	30
<b>Structure 3. Classification of matter</b> Structure 3.1—The periodic table: Classification of elements Structure 3.2—Functional groups: Classification of organic compounds	16	31
<b>Reactivity 1. What drives chemical reactions?</b> Reactivity 1.1—Measuring enthalpy change Reactivity 1.2—Energy cycles in reactions Reactivity 1.3—Energy from fuels Reactivity 1.4—Entropy and spontaneity (Additional higher level)	12	22
<b>Reactivity 2. How much, how fast and how far?</b> Reactivity 2.1—How much? The amount of chemical change Reactivity 2.2—How fast? The rate of chemical change Reactivity 2.3—How far? The extent of chemical change	21	31
<b>Reactivity 3. What are the mechanisms of chemical change?</b> Reactivity 3.1—Proton transfer reactions Reactivity 3.2—Electron transfer reactions Reactivity 3.3—Electron sharing reactions Reactivity 3.4—Electron-pair sharing reactions	24	45
<b>Experimental Programme</b>	40	60
Practical work	20	40
Collaborative sciences project	10	10
Scientific investigation	10	10

### Skills in the study of chemistry

The skills and techniques students must experience through the course are encompassed within the tools. These support the application and development of the inquiry process in the delivery of the chemistry course.

#### Tools

- › Experimental techniques
- › Technology
- › Mathematics Inquiry process
- › Exploring and designing
- › Collecting and processing data
- › Concluding and evaluating

Teachers are encouraged to provide opportunities for students to encounter and practise the skills throughout the programme. Rather than being taught as stand-alone topics, these skills should be integrated into the teaching of the syllabus when they are relevant to the syllabus topics being covered.

### Assessment model

There are four assessment objectives for the DP chemistry course. Having followed the chemistry course, students are expected to demonstrate the following assessment objectives.

#### Assessment objective 1

Demonstrate knowledge of:

- › terminology, facts and concepts
- › skills, techniques and methodologies.

#### Assessment objective 2

Understand and apply knowledge of:

- › terminology and concepts
- › skills, techniques and methodologies.

#### Assessment objective 3

Analyse, evaluate, and synthesize:

- › experimental procedures
- › primary and secondary data
- › trends, patterns and predictions.

#### Assessment objective 4

Demonstrate the application of skills necessary to carry out insightful and ethical investigations.

### ASSESSMENT AT A GLANCE

Type of assessment	Format of assessment	Time (hours)		Weighting of final grade percentage (%)
		SL	HL	
<b>External</b>		<b>3</b>	<b>4.5</b>	<b>80</b>
Paper 1	Paper 1A: Multiple-choice questions Paper 1B: Data-based questions on experimental work	1.5	2	36
Paper 2	Short-answer and extended-response questions	1.5	2.5	44
<b>Internal</b>		<b>10</b>		<b>20</b>
Scientific Investigation	The scientific investigation is an open-ended task in which the student gathers and analyses data in order to answer their own formulated research question. The outcome of the scientific investigation will be assessed through the form of a written report. The maximum overall word count for the report is 3,000 words.	10		20

## Group 4 – Sciences

### Physics: Higher Level and Standard Level

#### Course description and aims

As one of the three natural sciences in the IB Diploma Programme, physics is concerned with an attempt to understand the natural world; from determining the nature of the atom to finding patterns in the structure of the universe. It is the search for answers from how the universe exploded into life to the nature of time itself. Observations are essential to the very core of the subject. Models are developed to try to understand observations, and these themselves can become theories that attempt to explain the observations. Besides leading to a better understanding of the natural world, physics gives us the ability to alter our environments. DP physics enables students to constructively engage with topical scientific issues. Students examine scientific knowledge claims in a real-world context, fostering interest and curiosity. By exploring the subject, they develop understandings, skills and techniques which can be applied across their studies and beyond. Integral to the student experience of the DP physics course is the learning that takes place through scientific inquiry both in the classroom and the laboratory.

#### Through the overarching theme of the nature of science, the course aims to enable students to:

- › develop conceptual understanding that allows connections to be made between different areas of the subject, and to other DP sciences subjects
- › acquire and apply a body of knowledge, methods, tools and techniques that characterise science
- › develop the ability to analyse, evaluate and synthesize scientific information and claims
- › develop the ability to approach unfamiliar situations with creativity and resilience
- › design and model solutions to local and global problems in a scientific context
- › develop an appreciation of the possibilities and limitations of science
- › develop technology skills in a scientific context
- › develop the ability to communicate and collaborate effectively
- › develop awareness of the ethical, environmental, economic, cultural and social impact of science.

#### Curriculum model overview

The DP physics course promotes concept-based teaching and learning to foster critical thinking.

#### The DP physics course is built on:

- › approaches to learning
- › nature of science
- › skills in the study of physics.

These three pillars support a broad and balanced experimental programme. As students progress through the course, they become familiar with traditional experimentation techniques, as well as the application of technology. These opportunities help them to develop their investigative skills and evaluate the impact of error and uncertainty in scientific inquiry. The scientific investigation then places a specific emphasis on inquiry-based skills and the formal communication of scientific knowledge. Finally, the collaborative sciences project extends the development of scientific communication in a collaborative and interdisciplinary context, allowing students to work together beyond the confines of physics.

SYLLABUS COMPONENT	Recommended Hours	
	SL	HL
Syllabus Content	110	180
<b>A. Space, time and motion</b> A.1 Kinematics • A.2 Forces and momentum • A.3 Work, energy and power • A.4 Rigid body mechanics ••• A.5 Galilean and special relativity •••	27	42
<b>B. The particulate nature of matter</b> B.1 Thermal energy transfers • B.2 Greenhouse effect • B.3 Gas laws • B.4 Thermodynamics ••• B.5 Current and circuits •	24	32
<b>C. Wave behaviour</b> C.1 Simple harmonic motion •• C.2 Wave model • C.3 Wave phenomena •• C.4 Standing waves and resonance • C.5 Doppler effect ••	17	29
<b>D. Fields</b> D.1 Gravitational fields •• D.2 Electric and magnetic fields •• D.3 Motion in electromagnetic fields • D.4 Induction •••	19	38
<b>E. Nuclear and quantum physics</b> E.1 Structure of the atom •• E.2 Quantum physics ••• E.3 Radioactive decay •• E.4 Fission • E.5 Fusion and stars •	23	39
<b>Experimental Programme</b>	<b>40</b>	<b>60</b>
Practical work	20	40
Collaborative sciences project	10	10
Scientific investigation	10	10

Key to table:

- Topics with content that should be taught to all students
- Topics with content that should be taught to all students plus additional HL content
- Topics with content that should only be taught to HL students

## Skills in the study of physics

The skills and techniques students must experience through the course are encompassed within the tools. These support the application and development of the inquiry process in the delivery of the physics course.

### Tools

- › Experimental techniques
- › Technology
- › Mathematics

### Inquiry process

- › Exploring and designing
- › Collecting and processing data
- › Concluding and evaluating

Teachers are encouraged to provide opportunities for students to encounter and practise the skills throughout the programme. Rather than being taught as stand-alone topics, these skills should be integrated into the teaching of the syllabus when they are relevant to the syllabus topics being covered.

## Assessment model

There are four assessment objectives for the DP chemistry course. Having followed the chemistry course, students are expected to demonstrate the following assessment objectives.

### Assessment objective 1

Demonstrate knowledge of:

- › terminology, facts and concepts
- › skills, techniques and methodologies.

### Assessment objective 2

Understand and apply knowledge of:

- › terminology and concepts
- › skills, techniques and methodologies.

### Assessment objective 3

Analyse, evaluate, and synthesize:

- › experimental procedures
- › primary and secondary data
- › trends, patterns and predictions.

### Assessment objective 4

Demonstrate the application of skills necessary to carry out insightful and ethical investigations.

ASSESSMENT AT A GLANCE				
Type of assessment	Format of assessment	Time (hours)		Weighting of final grade percentage (%)
		SL	HL	
<b>External</b>		<b>3</b>	<b>4.5</b>	<b>80</b>
Paper 1	Paper 1A: Multiple-choice questions Paper 1B: Data-based questions on experimental work	1.5	2	36
Paper 2	Short-answer and extended-response questions	1.5	2.5	44
<b>Internal</b>		<b>10</b>		<b>20</b>
Scientific Investigation	The scientific investigation is an open-ended task in which the student gathers and analyses data in order to answer their own formulated research question. The outcome of the scientific investigation will be assessed through the form of a written report. The maximum overall word count for the report is 3,000 words.	10		20

## Group 4 Sciences: Computer science: Higher Level and Standard Level

### First assessment 2027 Course description and aims

The DP computer science course requires an understanding of the fundamental concepts of computing systems and the ability to apply the computational thinking process to solve problems in the real world. The course also requires students to develop skills in algorithmic thinking and computer programming.

DP computer science is engaging, accessible, inspiring and rigorous, and has the following characteristics.

#### The course:

- › draws on a wide spectrum of knowledge of computer systems
- › develops skills in algorithmic thinking and computer programming
- › is underpinned by the computational thinking process
- › enables and empowers innovation, exploration and the acquisition of further knowledge
- › includes the study of machine learning
- › raises ethical issues.

#### Computational thinking involves the ability to:

- › specify problems in terms of their computational context and determine success criteria
- › decompose complex real-world problems into more manageable problems
- › abstract problems and generalize them to enable algorithmic thinking and to develop solutions
- › test and evaluate solutions for improvements.

During the course, students will develop a computational solution. This will develop their ability to identify a problem or unanswered question, and design, develop and evaluate a proposed solution.

**The course enables students to:**

- › develop conceptual understanding that allows connections to be made between different areas of the subject, and to other DP subjects
- › acquire and apply a body of knowledge, methods, tools and techniques that characterize computer science
- › analyse and evaluate solutions developed through computational thinking in a range of contexts
- › approach unfamiliar situations with creativity and resilience
- › use computational thinking to design and implement solutions to local and global problems
- › develop an appreciation of the possibilities and limitations of computer science
- › evaluate the impact of emerging technologies in computer science
- › communicate and collaborate effectively
- › develop awareness of the environmental, economic, cultural and social impact of computer science, its applications and ethical implications.

**Curriculum model overview****The DP computer science course is organized into two key themes:**

Theme A: Concepts in computer science focuses on how computing systems work.

Theme B: Computational thinking and problem-solving focuses on how we can use computing systems to solve real-world problems.

The course also has a practical dimension, comprising the computational solution (internal assessment) and the collaborative sciences project.

The course can be studied in either the Python or Java programming languages.

SYLLABUS COMPONENT	Recommended Hours	
	SL	HL
Syllabus Content	105	195
<b>A. Concepts of computer science</b>		
A.1 Computer fundamentals	11	18
A.2 Networks	11	18
A.3 Databases	11	18
A.4 Machine learning	5	18
<b>B. Computational thinking and problem-solving</b>		
B.1 Computational thinking	5	5
B.2 Programming	40	42
B.3 Object oriented programming (OOP)	7	23
B.4 Abstract data types (HL only)	0	23
<b>Case study</b>	15	30
<b>Internal Assessment</b>		
The computational solution	35	35
<b>Collaborative sciences project</b>	10	10
<b>Total hours</b>	<b>150</b>	<b>240</b>

**Assessment model**

At the end of the course, students select and organize visual and written materials to submit to the IB for online. There are four assessment objectives for the DP computer science course. At the end of the course, students are expected to have met the following objectives:

**Assessment Objective 1—Demonstrate knowledge and understanding of:**

- › facts, concepts, principles and terminology in computer science
- › appropriate methods, techniques and skills to solve problems using computational thinking.

**Assessment Objective 2—Apply and use:**

- › facts, concepts, principles and terminology in computer science
- › appropriate methods, techniques and skills to solve problems using computational thinking
- › appropriate methods to present information in computer science.

**Assessment Objective 3—Construct, synthesize, analyse and evaluate:**

- › problem specifications, system requirements, success criteria, testing strategies, and programs
- › appropriate techniques to the solution of a problem
- › relevant data, information and technological explanations for solutions.

**Assessment Objective 4**

- › Demonstrate the application of computational thinking skills to solve real-world problems using computer science solutions.

ASSESSMENT AT A GLANCE			
Type of assessment	Format of assessment	Time/Weighting	
		SL	HL
External		150 min (70%)	360 min (80%)
Paper 1	<ul style="list-style-type: none"> <li>› Questions focused on the four topics in theme A, “Concepts of computer science”.</li> <li>› The paper also consists of three questions related to the case study.</li> </ul>	75 min (35%)	20 min (40%)
Paper 2	<ul style="list-style-type: none"> <li>› Questions for SL and HL focused on the three topics in theme B, “Computational thinking and problem-solving”.</li> <li>› Additional questions for HL, focused on OOP and abstract data types. Students can answer questions in either Java or Python.</li> </ul>	1.5 (35%)	2 (40%)
Internal		35 hours	
The computational solution Students develop a computational solution to a real-world problem of their own choosing. The solution should use the concepts, skills and tools acquired in the course and the computational thinking process.		(30%)	(20%)

Programming is required to answer some of the questions on Paper 2. Questions that require programming will have equivalent versions for students to choose from, one in Java and the other in Python, according to the programming language they have studied

## 10.5. Group 5 – Mathematics

It is a requirement of the programme that students study at least one course in mathematics. There are four courses available in mathematics:

- › Mathematics: analysis and approaches SL
- › Mathematics: analysis and approaches HL
- › Mathematics: applications and interpretation SL
- › Mathematics: applications and interpretation HL

Students can only study one course in mathematics.

All DP mathematics courses serve to accommodate the range of needs, interests and abilities of students, and to fulfill the requirements of various university and career aspirations.

The aims of these courses are to enable students to:

- › develop mathematical knowledge, concepts and principles
- › develop logical, critical and creative thinking
- › employ and refine their powers of abstraction and generalisation.

Students are also encouraged to:

- › appreciate the international dimensions of mathematics and the multiplicity of its cultural and historical perspectives.
- › develop a curiosity and enjoyment of mathematics, and appreciate its elegance and power
- › develop an understanding of the concepts, principles and nature of mathematics
- › communicate mathematics clearly, concisely and confidently in a variety of contexts
- › develop logical and creative thinking, and patience and persistence in problem solving to instill confidence in using mathematics
- › employ and refine their powers of abstraction and generalisation
- › take action to apply and transfer skills to alternative situations, to other areas of knowledge and to future developments in their local and global communities
- › appreciate how developments in technology and mathematics influence each other
- › appreciate the moral, social and ethical questions arising from the work of mathematicians and the applications of mathematics
- › appreciate the universality of mathematics and its multicultural, international and historical perspectives
- › appreciate the contribution of mathematics to other disciplines, and as a particular “area of knowledge” in the TOK course
- › develop the ability to reflect critically upon their own work and the work of others
- › independently and collaboratively extend their understanding of mathematics.

### Prior learning

It is expected that most students embarking on a DP mathematics course will have studied mathematics for at least 10 years. There will be a great variety of topics studied, and differing approaches to teaching and learning. Thus, students will have a wide variety of skills and knowledge when they start their DP mathematics course. Most will have some background in arithmetic, algebra, geometry, trigonometry, probability and statistics. Some will be familiar with an inquiry approach, and may have had an opportunity to complete an extended piece of work in mathematics.

### Which course should students who want to study mathematics at university take?

Students who want to take a university course with a substantial mathematical element such as mathematics degrees, medicine or some natural sciences degrees particularly physics plus some engineering courses should take the Mathematics: Analysis and approaches course. Those thinking about computer science, some natural

sciences degrees, social sciences, humanities, certain economics and statistics courses, design and the arts will be well prepared by the Mathematics: Applications and interpretation course.

### Should I choose SL or HL?

Students who have taken MYP extended mathematics, or who have strong results from GCSE or IGCSE, or Algebra II should consider themselves well prepared for DP mathematics HL courses. Additionally, strong math students from any previous course, should consider a HL math course as an option for them.

### Mathematics: analysis and approaches HL & SL

This course is offered at both SL and HL. It is designed for students who enjoy developing their mathematics to become fluent in the construction of mathematical arguments and develop strong skills in mathematical thinking. They will explore real and abstract applications, sometimes with technology, and will enjoy the thrill of mathematical problem solving and generalisation.

The course is intended for students who wish to pursue studies in mathematics at university or subjects that have a large mathematical content; it is for students who enjoy developing mathematical arguments, problem solving and exploring real and abstract applications, with and without technology.

### Course description and aims

The IB DP Mathematics: analysis and approaches course recognizes the need for analytical expertise in a world where innovation is increasingly dependent on a deep understanding of mathematics. The focus is on developing important mathematical concepts in a comprehensible, coherent and rigorous way, achieved by a carefully balanced approach. Students are encouraged to apply their mathematical knowledge to solve abstract problems as well as those set in a variety of meaningful contexts. Mathematics: analysis and approaches has a strong emphasis on the ability to construct, communicate and justify correct mathematical arguments. Students should expect to develop insight into mathematical form and structure, and should be intellectually equipped to appreciate the links between concepts in different topic areas. Students are also encouraged to develop the skills needed to continue their mathematical growth in other learning environments. The internally assessed exploration allows students to develop independence in mathematical learning. Throughout the course students are encouraged to take a considered approach to various mathematical activities and to explore different mathematical ideas.

### Curriculum model overview

Mathematics: analysis and approaches and Mathematics: applications and interpretation share 60 hours of common SL content.



Syllabus Component	Recommended teaching hours	
	SL	HL
Number and algebra	19	39
Functions	21	32
Geometry and trigonometry	25	51
Statistics and probability	27	33
Calculus	28	55
Development of investigational problem-solving and modelling skills and the exploration of an area of mathematics	30	30
<b>Total teaching hours</b>	<b>150</b>	<b>240</b>

### Assessment model

Problem-solving is central to learning mathematics and involves the acquisition of mathematical skills and concepts in a wide range of situations, including non-routine, open-ended and real-world problems.

The assessment objectives are common to Mathematics:

1.) Applications & interpretation and 2.) Analysis & approaches.

- › Knowledge and understanding: Recall, select and use their knowledge of mathematical facts, concepts and techniques in a variety of familiar and unfamiliar contexts.
- › Problem solving: Recall, select and use their knowledge of mathematical skills, results and models in both abstract and real-world contexts to solve problems.
- › Communication and interpretation: Transform common realistic contexts into mathematics; comment on the context; sketch or draw mathematical diagrams, graphs or constructions both on paper and using technology; record methods, solutions and conclusions using standardized notation; use appropriate notation and terminology.
- › Technology: Use technology accurately, appropriately and efficiently both to explore new ideas and to solve problems.
- › Reasoning: Construct mathematical arguments through use of precise statements, logical deduction and inference and by the manipulation of mathematical expressions.
- › Inquiry approaches: Investigate unfamiliar situations, both abstract and from the real world, involving organizing and analyzing information, making conjectures, drawing conclusions, and testing their validity.

The exploration is an integral part of the course and its assessment, and is compulsory for both SL and HL students. It enables students to demonstrate the application of their skills and knowledge, and to pursue their personal interests, without the time limitations and other constraints that are associated with written examinations.

**ASSESSMENT AT A GLANCE**

Type of assessment	Format of assessment	Time (hours)		Weighting of final grade (%)	
		SL	HL	SL	HL
<b>External</b>		<b>3</b>	<b>5</b>	<b>80</b>	<b>80</b>
Paper 1	No technology allowed. Section A: compulsory short-response questions based on the syllabus. Section B: compulsory extended-response questions based on the syllabus.	1.5	2	40	30
Paper 2	Technology allowed. Section A: compulsory short-response questions based on the syllabus. Section B: compulsory extended-response questions based on the syllabus.	1.5	2	40	30
Paper 3 HL only	Technology allowed. Two compulsory extended-response problem-solving questions.	NA	1	NA	20
<b>Internal</b>		<b>15</b>		<b>20</b>	
Exploration		15	15	20	20

**Mathematics: applications and interpretation HL & SL**

This course is offered at both SL and HL for students who are interested in developing their mathematics for describing our world, modelling and solving practical problems using the power of technology. Students who take *Mathematics: Applications and interpretation* will be those who enjoy mathematics best when seen in a practical context.

The course is designed for students who enjoy describing the real world and solving practical problems using mathematics, those who are interested in harnessing the power of technology alongside exploring mathematical models and enjoy the more practical side of mathematics.

**Course description and aims**

Individual students have different needs, aspirations, interests and abilities. For this reason there are two different DP subjects in mathematics, *Mathematics: analysis and approaches* and *Mathematics: applications and interpretation*. Each course is designed to meet the needs of a particular group of students. Both courses are offered at SL and HL.

The IB DP *Mathematics: applications and interpretation* 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 includes topics that are traditionally part of a pre-university mathematics course such as calculus and statistics. Students are encouraged to solve real-world problems, construct and communicate this mathematically and interpret the conclusions or generalisations. Students should expect to develop strong technology skills, and will be intellectually equipped to appreciate the links between the theoretical and the practical concepts in mathematics. All external assessments involve the use of technology. Students are also encouraged to develop the skills needed to continue their mathematical growth in other learning environments.

The internally assessed exploration allows students to develop independence in mathematical learning. Throughout the course students are encouraged to take a considered approach to various mathematical activities and to explore different mathematical ideas.

### Curriculum model overview

Mathematics: applications and interpretation and Mathematics: analysis and approaches share 60 hours of common content.

Syllabus Component	Recommended teaching hours	
	SL	HL
Number and algebra	16	29
Functions	31	42
Geometry and trigonometry	18	46
Statistics and probability	36	52
Calculus	19	41
Development of investigational problem-solving and modelling skills and the exploration of an area of mathematics	30	30
<b>Total teaching hours</b>	<b>150</b>	<b>240</b>

### Assessment model

Problem-solving is central to learning mathematics and involves the acquisition of mathematical skills and concepts in a wide range of situations, including non-routine, open-ended and real-world problems.

**The assessment objectives are common to Mathematics: applications and interpretation and to Mathematics: analysis and approaches.**

- › Knowledge and understanding: Recall, select and use their knowledge of mathematical facts, concepts and techniques in a variety of familiar and unfamiliar contexts.
- › Problem solving: Recall, select and use their knowledge of mathematical skills, results and models in both abstract and real-world contexts to solve problems.
- › Communication and interpretation: Transform common realistic contexts into mathematics; comment on the context; sketch or draw mathematical diagrams, graphs or constructions both on paper and using technology; record methods, solutions and conclusions using standardized notation; use appropriate notation and terminology.
- › Technology: Use technology accurately, appropriately and efficiently both to explore new ideas and to solve problems.
- › Reasoning: Construct mathematical arguments through use of precise statements, logical deduction and inference and by the manipulation of mathematical expressions.
- › Inquiry approaches: Investigate unfamiliar situations, both abstract and from the real world, involving organizing and analyzing information, making conjectures, drawing conclusions, and testing their validity.

The exploration is an integral part of the course and its assessment, and is compulsory for both SL and HL students. It enables students to demonstrate the application of their skills and knowledge, and to pursue their personal interests, without the time limitations and other constraints that are associated with written examinations.

### ASSESSMENT AT A GLANCE

Type of assessment	Format of assessment	Time (hours)		Weighting of final grade (%)	
		SL	HL	SL	HL
External		3	5	80	80
Paper 1	Technology allowed. Compulsory short-response questions based on the syllabus.	1.5	2	40%	30%
Paper 2	Technology allowed. Compulsory extended-response questions based on the syllabus.	1.5	2	40%	30%
Paper 3	Technology allowed. Two compulsory extended-response problem-solving questions.	NA	1	NA	20%
Internal		15		20	
Exploration		15	15	20%	20%



## 10.6. Group 6 – The Arts

### Visual Arts: Higher Level and Standard Level

The Diploma Programme (DP) is a rigorous pre-university course of study designed for students in the 16 to 19 age range. It is a broad-based two-year course that aims to encourage students to be knowledgeable and inquiring, but also caring and compassionate. There is a strong emphasis on encouraging students to develop intercultural understanding, open-mindedness, and the attitudes necessary for them to respect and evaluate a range of points of view. The course is presented as six academic areas enclosing a central core. Students study two modern languages (or a modern language and a classical language), a humanities or social science subject, an experimental science, mathematics and one of the creative arts. Instead of an arts subject, students can choose two subjects from another area. It is this comprehensive range of subjects that makes the Diploma Programme a demanding course of study designed to prepare students effectively for university entrance. In each of the academic areas students have flexibility in making their choices, which means they can choose subjects that particularly interest them and that they may wish to study further at university. Normally, three subjects (and not more than four) are taken at higher level (HL), and the others are taken at standard level (SL). The IB recommends 240 teaching hours for HL subjects and 150 hours for SL. Subjects at HL are studied in greater depth and breadth than at SL. In addition, three core elements—the extended essay, theory of knowledge and creativity, activity, service—are compulsory and central to the philosophy of the programme.

#### Course description and aims

Visual arts are an integral part of our daily lives. They have social, political, ritual, spiritual, decorative and functional values. 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 working with a variety of art-making forms and creative strategies, and learn art-making as inquiry. Teachers and students can adapt the curriculum to their unique



contexts, interests and passions. Together, they are invited to 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 guided by artistic intentions.

The course encourages students to engage with the world through individual and shared experiences, imagination and action, and it fosters creativity, communication, critical thinking and collaboration—skills essential in a variety of rapidly evolving fields and professions. The syllabus supports learning through authentic art-making experiences and student choice, encouraging teachers to support their students in becoming progressively more independent art practitioners.

Teaching and learning of conceptual and material skills and methods allow students to think and work like artists. During the course they develop a personal visual language and learn to communicate artistic intentions to different audiences, connecting with the work of other artists and considering the significance of context(s). 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.

**The aims of the arts subjects are to enable students to:**

1. explore the diversity of the arts across time, cultures and contexts
2. develop as imaginative and skilled creators and collaborators
3. express ideas creatively and with competence
4. critically reflect on the process of creating and experiencing the arts
5. develop as informed, perceptive and analytical practitioners
6. enjoy lifelong engagement with the arts.

**The visual arts course aims to enable students to:**

7. appreciate that art-making enhances knowledge, develops understanding and transforms ways of being
8. employ curiosity, creativity and dialogue to more openly engage with self, the world and others
9. draw on artmaking and artworks for their own, and their communities', well-being and flourishing.

## Curriculum model overview

The visual arts course is a creative, practice-based course.

Students work in the classroom as they would in an art studio. Art-making as inquiry is at the centre of the syllabus and students learn through three core areas—create, connect and communicate. These are introduced as discrete elements of the course; however, in practice, this division will only occasionally predominate.

Learning art-making as inquiry will mostly integrate create, connect and communicate. This is to allow students to embrace the holistic nature of visual arts practice. However, teachers will at times need to make explicit the division of content and focus on just one of the core areas, to ensure that students have sufficient understanding, skills and methods to develop their artistic intentions and their artwork.

Students gain a deeper understanding of the visual arts through working with a variety of art-making forms and creative strategies, and develop a personal visual language as well as critical and curatorial skills and methods.

During the two years of the course, students are supported and guided by their teachers to become increasingly more independent visual artists. Seven assessment objectives, clearly defined and embedded in the creative process, guide teachers and students from the beginning to the end of the course.

Students learn to nurture their artistic practice and to develop their ideas, work and reflections through observation, experimentation and investigation. The course is designed to deepen students' understanding of the interactive and generative nature of the work of visual artists, and to promote flexible and iterative creative processes.

Visual arts journals—which might take a variety of formats—are used by students to generate, progress and develop their art-making as inquiry and their learning across the three core areas. Students realize and resolve artworks to communicate with audiences through synthesis of concept and form. Understanding of context(s) and cultural significance are also part of the curriculum, and students learn to consider the complex and dynamic relationships between artist, artwork, audience and context. Not only do students connect with the work of other artists, but they also learn to situate the artworks they study as well as their own.

As part of the visual arts course students learn to employ curiosity, creativity and dialogue to openly engage with the self, the world and others. They develop the skills to work independently, persist and repurpose, reflect critically and communicate effectively and with coherence as visual artists.

SYLLABUS AREA	CLASS HOURS
<p><b>Create</b> Teachers introduce a variety of art-making forms and creative strategies. Students learn how to generate ideas from investigation and observation, and engage with experimentation or in resolving artworks. They learn how to follow lines of inquiry from conception to realization and to develop a visual language.</p>	<p>SL 20 HL 30</p>
<p><b>Connect</b> Teachers introduce ways to investigate artworks from different times and contexts. Students consider the relationships between artwork, artist and audience. They learn how to situate their art-making in relation to context and to consider cultural significance.</p>	<p>SL 20 HL 30</p>
<p><b>Communicate</b> Teachers introduce methods of visual and written presentation, and create opportunities for dialogue and critique. Students learn how to curate, share and situate their artwork. Teachers introduce methods to digitally document and curate artwork.</p>	<p>SL 20 HL 30</p>
<p><b>Integration of create, connect, communicate</b> The majority of teaching hours in visual arts are devoted to making art as inquiry. Students integrate the core areas of create, connect and communicate, through the pursuit of personal lines of inquiry and while developing a coherent body of resolved artworks. They learn to:</p> <ul style="list-style-type: none"> <li>&gt; develop their artistic intentions and creative processes</li> <li>&gt; connect their art-making with the work of others</li> <li>&gt; create their artworks in context</li> <li>&gt; communicate with audiences.</li> </ul> <p>Teachers plan time and set reasonable deadlines for students to prepare the three summative assessment tasks.</p>	<p>SL 90 HL 150</p>
<p><b>Total Teaching Hours</b></p>	<p>SL 150 HL 240</p>

## Assessment model

At the end of the course, students select and organize visual and written materials to submit to the IB for online assessment—both SL and HL students curate and digitally submit three assessment tasks to evidence their learning.

All assessment tasks are non-examination based. Two tasks are externally assessed, and one is internally assessed by the teacher and externally moderated by the IB. The assessment model clearly differentiates the requirements between SL and HL, reflecting the teaching hours allocated at each level and the greater depth and breadth of work required in the HL course.

**Task 1** is common to SL and HL. All students complete the art-making inquiries portfolio.

**Task 2** is designed differently for SL and HL, to fully reflect the different allocation of teaching time at each level. SL students complete the connections study and HL students complete the artist project.

**Task 3** is the internal assessment (IA), differentiated between SL and HL. The IA is focused on the student's ability to create a coherent body of work. Both SL and HL students submit five resolved artworks, but some of the requirements of the task are different for each level.

Student work is assessed through assessment criteria and marks are allocated by applying level descriptors.

For their summative end-of-course assessment, students are expected to provide evidence of how they learned to create, connect and communicate as visual arts practitioners. There are seven assessment objectives common to SL and HL that provide measurable indicators of success and help to shape learning and teaching. The visual arts objectives are embedded in the creative process to support authentic learning and the design of valid, reliable and manageable assessment tasks.

### Visual arts students are expected to evidence how, as part of their art-making, they:

- › curate visual and written materials, including both developing and resolved artworks, to communicate artistic intentions and inquiry
- › investigate art forms and creative strategies, as well as meaning and cultural significance of artworks within and across contexts
- › generate intentions and artworks through inquiry and the application of creative strategies
- › refine artistic intentions and their own art-making through investigation, dialogue and critical reflection as part of inquiry
- › resolve artworks to fulfil intentions and convey meaning
- › situate their own artworks and art-making, as well as those of other artists, in relation to context(s), audience(s) and communities of artistic practice
- › synthesize concept and form through creative and curatorial practices to create artworks, communicate artistic intentions and connect with audience(s).

ASSESSMENT OUTLINE – SL	WEIGHTING
External Assessment	60%
<p><b>Art-making inquiries portfolio (32 marks)</b> This is an SL and HL task focused on the student’s art-making as inquiry.</p> <p>The student selects and organizes visual evidence of their personal investigations, discoveries and creations, supported by critical reflections, all in a portfolio. They provide curated evidence of their art-making as inquiry in a variety of art-making forms and creative strategies.</p> <p>The portfolio demonstrates how the student developed and refined their visual language through one or more lines of inquiry and must explicitly include the inquiry questions or generative statements they worked with.</p> <p><b>SL students submit two mandatory files.</b></p> <ul style="list-style-type: none"> <li>› One PDF file of up to 15 screens including visual evidence accompanied by written materials. The total word count must not exceed 3,000 words.</li> <li>› One separate text file listing the sources. 40%</li> </ul>	40%
<p><b>Connections study (24 marks)</b> This is an SL-only task focused on the student situating in context one of their resolved artworks, chosen from the five they submit for IA. The study presents curated visual and written evidence to demonstrate the connections between the student’s chosen resolved artwork and their own context(s), and between the chosen artwork and at least two artworks by different artists. The connections must be informed by research, and the study must demonstrate understanding of the cultural significance of the two artworks by different artists.</p> <p><b>SL students submit two mandatory files.</b></p> <ul style="list-style-type: none"> <li>› One PDF file of up to 10 screens including visual evidence and supporting written materials. The total word count must not exceed 2,500 words.</li> <li>› One separate text file listing the sources.</li> </ul>	20%
Internal Assessment	40%
<p>This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.</p> <p><b>Resolved artworks (32 marks)</b> This is an SL-only task focused on the student’s ability to create a coherent body of work. Each student submits five resolved artworks to demonstrate their best achievements in communicating their artistic intentions coherently.</p> <p>The student provides evidence of synthesis of concept and form, and of their competence in resolving artworks. They also write a rationale to articulate their artistic intentions and the choices that informed the making of their coherent body of artworks.</p> <p><b>SL students submit six mandatory files.</b></p> <ul style="list-style-type: none"> <li>› Five image or video files (each up to three minutes long) of artworks—each accompanied by a title and details on medium and size. Two optional supporting image files per artwork can be submitted to show details or additional views.</li> <li>› One PDF file of up to two screens for the rationale (which must not exceed 700 words).</li> </ul>	40%

ASSESSMENT OUTLINE – HL	WEIGHTING
External Assessment	60%
<p><b>Art-making inquiries portfolio (32 marks)</b> This is an SL and HL task focused on the student’s art-making as inquiry.</p> <p>The student selects and organizes visual evidence of their personal investigations, discoveries and creations, supported by critical reflections, all in a portfolio. They provide curated evidence of their art-making as inquiry in a variety of art-making forms and creative strategies.</p> <p>The portfolio demonstrates how the student developed and refined their visual language through one or more lines of inquiry and must explicitly include the inquiry questions or generative statements they worked with.</p> <p><b>SL students submit two mandatory files.</b></p> <ul style="list-style-type: none"> <li>› One PDF file of up to 15 screens including visual evidence accompanied by written materials. The total word count must not exceed 3,000 words.</li> <li>› One separate text file listing the sources. 40%</li> </ul>	30%
<p><b>Artist project (40 marks)</b> This is a stand-alone, HL-only task focused on the student creating and situating in context an artwork that they ideate and realize as part of a project of their choice.</p> <p>The artist project demonstrates through curated evidence how the student work was informed by investigations of context, by connections with at least two artworks by different artists, and by dialogues. A short video curated by the student shows where and how the project artwork was realized to communicate with the audience in the chosen context.</p> <p><b>HL students submit three mandatory files.</b></p> <ul style="list-style-type: none"> <li>› One PDF file of up to 12 screens including visual evidence and supporting written materials. The total word count must not exceed 2,500 words and the student must comply with the exact word counts set for each section.</li> <li>› One video file up to three minutes long presenting the project artwork realized in the chosen context. The video is submitted accompanied by the artwork details and a short text with the finalized artistic intentions (100 words maximum).</li> <li>› One separate text file listing the sources.</li> </ul>	30%
Internal Assessment	40%
<p>This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.</p> <p><b>Resolved artworks (40 marks)</b> This is an HL-only task focused on the student’s ability to create a coherent body of work selected from their wider production. Each student submits five selected resolved artworks of their works to demonstrate their best achievements in communicating their artistic intentions coherently.</p> <p>The student provides evidence of synthesis of concept and form, and of their competence in resolving artworks. They also write a rationale to articulate their artistic intentions through a selection process for the five resolved artworks, from at least eight of their works. Five artwork texts situate through critical analysis each of the selected resolved artworks in a wider artistic context and in relation to the student’s practice.</p> <p><b>HL students submit six mandatory files.</b></p> <ul style="list-style-type: none"> <li>› Five image or video files (each up to three minutes long) of artworks—each accompanied by a title and details on medium and size. Two optional supporting image files per artwork can be submitted to show details or additional views.</li> <li>› One PDF file of up to eight screens including the rationale (which must not exceed 700 words) and five artwork texts (with a total word count not exceeding 1,000 words).</li> </ul>	40%

## Group 6 – The Arts

### Film\*: Standard Level

#### Course description and aims

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 practical exercises in film production, students develop critical abilities and appreciation of artistic, cultural, historical and global perspectives in film. They examine concepts, theories, practices and ideas from multiple perspectives, challenging their own views to understand and value those of others. Students are challenged to acquire and develop critical thinking, reflective analysis and the imaginative synthesis through practical engagement in the art, craft and study of 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 course emphasizes the importance of working collaboratively, international and intercultural dynamics, and an appreciation of the development of film across time and culture.

The film syllabus allows for greater breadth and depth in teaching and learning at HL through an additional assessment task, requiring HL students to reflect on the core syllabus areas to formulate their own intentions for a completed film. They work collaboratively as a core production team in order to effectively communicate on screen.

#### Curriculum model overview

Syllabus Component	Recommended teaching hours	
	SL	HL
<b>Reading film</b> Examine film as an art form, studying a broad range of film texts from a variety of cultural contexts and analysing how film elements combine to create meaning.	45	45
<b>Contextualizing film</b> Explore the evolution of film across time and culture. Examine various areas of film focus in order to recognize the similarities and differences that exist between films from contrasting cultural contexts.	45	45
<b>Exploring film production roles</b> Explore various film production roles through engagement with all phases of the filmmaking process. Acquire, develop and apply skills through filmmaking exercises, experiments and completed films.	60	60
<b>HL only: Collaboratively producing film</b> Focus on the collaborative aspects of filmmaking and experience working in core production teams to fulfill shared artistic intentions. Work in chosen film production roles and contribute to all phases of the filmmaking process to collaboratively create original completed films.	-	90

#### The following are the aims of the film course.

Explore the various contexts of film and make links to, and between, films, filmmakers and filmmaking techniques (inquiry).

Acquire and apply skills as discerning interpreters of film and as creators of film, working both individually and collaboratively (action).

Develop evaluative and critical perspectives on their own film work and the work of others (reflection).

## Assessment model

It is expected that by the end of the film course, students at SL or HL will be able to demonstrate the following:

- › Knowledge and understanding of specified contexts and processes;
- › Application and analysis of knowledge and understanding
- › Synthesis and evaluation;
- › Select, use and apply a variety of appropriate skills and techniques.

ASSESSMENT AT A GLANCE			
Type of assessment	Format of assessment	Weight %	
<b>External</b>		SL	HL
Textual analysis	Textual analysis (max 1,750 words) of a prescribed film text based on a chosen extract (max 5 mins), and list of sources.	30	20
Comparative study	Recorded multimedia comparative study (max 10 mins), and list of sources.	30	20
<b>Internal</b>			
Film portfolio	Portfolio pages (max 9 pages: 3 pages per production role) and list of sources. A film reel (max 9 mins: 3 mins per production role, including 1 completed film).	40	25
Collaborative film project (HL only)	Completed film (max 7 mins). Project report (max 2,000 words) and list of sources.	-	35



# 11. Diploma Programme Core

## Theory of knowledge (TOK)

### Course description and aims

The TOK course plays a special role in the DP by providing an opportunity for students to reflect on the nature, scope and limitations of knowledge and the process of knowing. In this way, the main focus of TOK is not on students acquiring new knowledge but on helping students to reflect on, and put into perspective, what they already know. TOK underpins and helps to unite the subjects that students encounter in the rest of their DP studies. It engages students in explicit reflection on how knowledge is arrived at in different disciplines and areas of knowledge, on what these areas have in common and the differences between them.

### The aims of the DP theory of knowledge course are:

- › to encourage students to reflect on the central question “How do we know that?” and to recognize the value of asking that question
- › to expose students to ambiguity, uncertainty and questions with multiple plausible answers
- › to equip students to effectively navigate and make sense of the world, and help prepare them to encounter novel and complex situations
- › to encourage students to be more aware of their own perspectives and to reflect critically on their own beliefs and assumptions
- › to engage students with multiple perspectives, foster open-mindedness and develop intercultural understanding
- › to encourage students to make connections between academic disciplines by exploring underlying concepts and by identifying similarities and differences in the methods of inquiry used in different areas of knowledge
- › to prompt students to consider the importance of values, responsibilities and ethical concerns relating to the production, acquisition, application and communication of knowledge



## Curriculum model overview

COURSE ELEMENT	Teaching hours
<p><b>Core theme:</b> Knowledge and the knower This theme provides an opportunity for students to reflect on themselves as knowers and thinkers, and on the different communities of knowers to which we belong.</p>	32
<p><b>Optional themes</b> Students are required to study two optional themes from the following five options</p> <ul style="list-style-type: none"> <li>› Knowledge and technology</li> <li>› Knowledge and language</li> <li>› Knowledge and politics</li> <li>› Knowledge and religion</li> <li>› Knowledge and indigenous societies</li> </ul>	
<p><b>Areas of knowledge</b> Students are required to study the following five areas of knowledge</p> <ul style="list-style-type: none"> <li>› History</li> <li>› The human sciences</li> <li>› The natural sciences</li> <li>› The arts</li> <li>› Mathematics</li> </ul>	50

## Assessment model

Students are required to complete two assessment tasks for theory of knowledge:

- › Theory of knowledge exhibition
- › Theory of knowledge essay on a prescribed title

## Assessment objectives

Having completed the TOK course, students should be able to:

- › demonstrate TOK thinking through the critical examination of knowledge questions
- › identify and explore links between knowledge questions and the world around us
- › identify and explore links between knowledge questions and areas of knowledge
- › develop relevant, clear and coherent arguments
- › use examples and evidence effectively to support a discussion
- › demonstrate awareness and evaluation of different points of view
- › consider the implications of arguments and conclusions

**ASSESSMENT AT A GLANCE**

Type of assessment	Format of assessment	Time	Weighting
External	Theory of knowledge essay	10 hours	2/3
Students are required to write an essay in response to one of the six prescribed titles that are issued by the IB for each examination session. As an external assessment component, it is marked by IB examiners.			
Internal	Theory of knowledge exhibition	8 hours	1/3
Students are required to create an exhibition of three objects with accompanying commentaries that explores how TOK manifests in the world around us. This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.			

**Sample questions****Specimen essay titles**

- › How important are the opinions of experts in the search for knowledge? Answer with reference to the arts and one other area of knowledge.
- › Is the division of the natural sciences and mathematics into separate areas of knowledge artificial?
- › When historians and natural scientists say that they have explained something, are they using the word “explain” in the same way?
- › Are there fewer ethical constraints on the pursuit of knowledge in the arts than in the human sciences?
- › How do our expectations impact our interpretations? Discuss with reference to history and one other area of knowledge.
- › To what extent do you agree with the claim that “knowledge is of no value unless you put it into practice” (Anton Chekhov)? Answer with reference to two areas of knowledge.

**Sample exhibition prompts**

- › What counts as knowledge?
- › On what grounds might we doubt a claim?
- › Are some types of knowledge less open to interpretation than others?
- › Is bias inevitable in the production of knowledge?
- › Should some knowledge not be sought on ethical grounds?
- › What role do experts play in influencing our consumption or acquisition of knowledge?
- › How can we distinguish between knowledge, belief and opinion?

**TOK/EE Score Matrix**

The extended essay contributes to the overall diploma score through the award of points in conjunction with theory of knowledge. A maximum of three points are awarded according to a student’s combined performance in both the extended essay and theory of knowledge.

TOK EE	A	B	C	D	E
A	3	3	2	2	Failing condition
B	3	2	2	1	Failing condition
C	2	2	1	0	Failing condition
D	2	1	0	0	Failing condition
E	Failing condition				

## Diploma Programme Core Extended Essay (EE)

### Course description and aims

The extended essay, a component of the DP core, is a compulsory, externally assessed piece of independent research, presented as a formal piece of academic writing. It is an in-depth study of a focused topic, undertaken either through a subject-focused approach, or an interdisciplinary approach combining two DP subjects.

Students choose from the list of available Diploma Programme subjects for the examination session in question. For those taking the diploma this is normally one of the student's six selected subjects, or two in the case of the interdisciplinary pathway. Students can also choose a topic in which they have some background knowledge. The EE is intended to promote academic research and writing skills. It gives students the opportunity to engage in personal research on their own choice of topic, under the guidance of a supervisor (an appropriately qualified member of staff within the school). Students produce a significant piece of appropriately presented and structured writing, in which their ideas and findings are communicated in a coherent, reasoned manner that is suitable for the chosen subject(s).

The extended essay aims are to enable students to:

- › experience the excitement of intellectual exploration
- › engage in student-led academic research on a topic of personal interest
- › develop skills in research, thinking, self-management, and communication
- › reflect on the learning experience of producing an extended essay.

## Overview of the extended essay process

### The research process

The research process involves the following steps, though the order may unfold differently for different students.

- › Choose a broad topic then refine and focus it.
- › Decide the appropriate pathway: interdisciplinary or subject-focused.
- › Choose the approved DP subject(s).
- › Undertake some preparatory reading.
- › Form a well-focused research question.
- › Plan the research and writing process.
- › Plan a structure for the essay. This may change as the research develops.
- › Carry out the research.

### Writing and formal presentation

The required elements of the final submission are as follows.

- › Title page
- › Contents page
- › Introduction
- › Body of the essay
- › Conclusion
- › References and bibliography

The upper limit of 4,000 words includes the introduction, body, conclusion and any quotations.

### Reflection process

Reflection is the process by which students recapture their experience and think about its impact on them as learners. This includes how they envisage applying what they have learned to other circumstances, including future studies, career, or life in general. To assist students with this, there are three mandatory, formal reflection sessions with the supervisor.

The reflection sessions also give students the opportunity to:

- › reflect on their engagement with the research process
- › consider the effectiveness of their choices
- › re-examine their ideas and decide whether changes are needed.



The final reflection session is the viva voce, a short interview (10–15 minutes) between the student and the supervisor. The viva voce serves to check academic integrity, reflect on successes and difficulties, and think about what has been learned. Reflective thinking is recorded as a 500-word reflective statement. The student writes the statement at the end of the extended essay process and includes it on the Reflection and progress form (RPF). The form also notes the student's attendance at each reflection session.

### Assessment model

The extended essay, whether subject-focused or interdisciplinary, is assessed against common criteria. In working on the extended essay, students are expected to achieve the following assessment objectives.

### Assessment component

#### Know and understand

- › To demonstrate knowledge and understanding of the topic chosen and the research question posed.
- › To demonstrate knowledge and understanding of terminology and concepts.
- › To demonstrate knowledge and understanding of relevant research methods.

#### Apply and analyse

- › To apply relevant research methods to respond to the research question.
- › To analyse the research to determine appropriate findings.

#### Synthesize and evaluate

- › To discuss in a balanced way the significance of the research findings.
- › To develop a clear line of argument that links the research question, research findings, and conclusions.
- › To evaluate the effectiveness of the essay.
- › To evaluate the extended essay learning experience and reflect on the growth of the learner.

#### Communicate research

- › To communicate research according to appropriate structural conventions.
- › To understand and demonstrate academic integrity.

### Assessment criteria

#### Framework for the essay

- › Do the research question, research methods, and structural conventions followed provide an effective framework for the essay?

#### Knowledge and understanding

- › Does the student demonstrate knowledge and understanding of the subject matter being used in their research?

#### Analysis and line of argument

- › Does the student analyse the information presented in the essay and produce a line of argument?

#### Discussion and evaluation Reflection

- › Does the student discuss the findings and evaluate the essay?
- › Does the student evaluate the effect of the extended essay learning experience on them as a learner?

The extended essay contributes to the student's overall score for the diploma through points awarded in conjunction with theory of knowledge. A maximum of three points are awarded according to a student's combined performance in both the extended essay and theory of knowledge.

## EXAMPLE EXTENDED ESSAY TOPICS

Research question	Approach
<b>Language A:</b> How effectively does Oscar Wilde both present and critique social expectations in <i>The Importance of Being Earnest</i> ?	Various social expectations are identified, such as marriage, manners, religion, duty and gender. How effectively Wilde presents and critiques them is investigated through a close reading of the play and attention to language. Some background research into Victorian society provides social context, but the focus is on the play.
<b>Economics:</b> Does current economic research into minimum wage invalidate the neoclassical argument that increasing the minimum wage will lead to increased levels of unemployment?	The neoclassical argument is researched and presented. The counterarguments are researched and evaluated in terms of the nature of the evidence and studies that have been carried out.
<b>Psychology:</b> Is mindfulness or cognitive behaviour therapy (CBT) the more effective means of coping with stress?	Research that directly compares the two treatments is analysed, leading to a well evidenced conclusion.
<b>Chemistry:</b> What is the effect of manganese oxide versus copper (II) oxide in the catalysation of hydrogen peroxide at 21°C?	Background information is sought regarding the decomposition of hydrogen peroxide and different catalytic pathways and mechanisms. This is followed by practical research using carefully selected variables.
<b>Visual arts:</b> To what extent do the skull series of compositions by the artist Joni Brenner embody the cyclical nature of life and death?	The socio-historical context of Apartheid and the art produced in the post-Apartheid era is researched. This is followed by an analysis of the artistic and symbolic aspects of Brenner's skull compositions.



## Diploma Programme Core Creativity, activity, service (CAS)

### Description and aims

Creativity, activity, service (CAS) is at the heart of the DP. With its holistic approach, CAS is designed to strengthen and extend students' personal and interpersonal learning from the Primary Years Programme (PYP) and Middle Years Programme (MYP).

**CAS is organized around the three strands of creativity, activity and service defined as follows.**

- › Creativity—exploring and extending ideas leading to an original or interpretive 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.

**CAS aims to develop students who:**

- › enjoy and find significance in a range of CAS experiences
- › purposefully reflect upon their experiences
- › identify goals, develop strategies and determine further actions for personal growth
- › explore new possibilities, embrace new challenges and adapt to new roles
- › actively participate in planned, sustained and collaborative CAS projects
- › understand they are members of local and global communities with responsibilities towards each other and the environment.

A CAS experience is a specific event in which the student engages with one or more of the three CAS strands. It can be a single event or an extended series of events. A CAS project is a collaborative series of sequential CAS experiences lasting at least one month. Typically, a student's CAS programme combines planned/unplanned singular and ongoing experiences. All are valuable and may lead to personal development. However, a meaningful CAS programme must be more than just a series of unplanned/singular experiences. Students must be involved in at least one CAS project during the programme.

### Programme overview

The CAS programme formally begins at the start of the DP and continues regularly for at least 18 months with a reasonable balance between creativity, activity and service.

**A CAS experience must:**

- › fit within one or more of the CAS strands
- › be based on a personal interest, skill, talent or opportunity for growth
- › provide opportunities to develop the attributes of the IB learner profile
- › not be used or included in the student's DP course requirements.

CAS students have guidance at the school level through a variety of resources including the school's CAS handbook, information sessions and meetings. In addition, students have three formal interviews with the school's CAS coordinator/adviser.

**Typically, students' service experiences involve the following stages.**

- › Investigation, preparation and action that meets an identified need.
- › Reflection on significant experiences throughout to inform problem-solving and choices.
- › Demonstration allowing for sharing of what has taken place.

All CAS students are expected to maintain and complete a CAS portfolio as evidence of their engagement with CAS. The CAS portfolio is a collection of evidence that showcases CAS experiences and student reflections; it is not formally assessed.

A school's CAS programme is evaluated as part of the school's regular programme evaluation and self-study process that assesses the overall implementation of the DP.

### Learning outcomes

Completion of CAS is based on student achievement of the seven CAS learning outcomes. Through their CAS portfolio, students provide the school with evidence demonstrating achievement of each learning outcome. Some learning outcomes may be achieved many times, while others may be achieved less frequently. In their CAS portfolio, students provide the school with evidence of having achieved each learning outcome at least once through their CAS programme.

Learning outcome	Descriptor
Identify own strengths and develop areas for growth.	Students are able to see themselves as individuals with various abilities and skills, of which some are more developed than others.
Demonstrate that challenges have been undertaken, developing new skills in the process.	A new challenge may be an unfamiliar experience or an extension of an existing one. The newly acquired or developed skills may be shown through new experiences or through increased expertise in an established area.
Demonstrate how to initiate and plan a CAS experience.	Students can articulate the stages from conceiving an idea to executing a plan for individual or collaborative CAS experiences. Students may show their knowledge and awareness by building on a previous experience or by launching a new idea or process.
Show commitment to, and perseverance in, CAS experiences.	Students demonstrate regular involvement and active engagement in CAS.
Demonstrate the skills and recognize the benefits of working collaboratively.	Students are able to identify, demonstrate and critically discuss the benefits and challenges of collaboration gained through CAS experiences.
Demonstrate engagement with issues of global significance.	Students are able to identify and demonstrate their understanding of global issues, make responsible decisions and take appropriate action in response to the issue either locally, nationally or internationally.
Recognize and consider the ethics of choices and actions.	Students show awareness of the consequences of choices and actions in planning and carrying out CAS experiences.

### Sample projects

- › Creativity: A student group plans, designs and creates a mural.
- › Activity: Students organize and participate in a sports team including training sessions and matches against other teams.
- › Service: Students set up and conduct tutoring for people in need.
- › Service and activity: Students plan and participate in the planting and maintenance of a garden with members of the local community.
- › Creativity, activity and service: Students rehearse and perform a dance production for a community retirement home.



Please look for more information about:

**H.I.S. Curriculum**

[hischool.de/curriculum](http://hischool.de/curriculum)

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