H.I.S.
Heidelberg International School

dedicated to making a difference

Diploma Programme

Heidelberg International School

International Baccalaureate Diploma Programme

DP Curriculum
2022 – 2024

WE ARE AN ACCREDITED SCHOOL

Accredited

Table of Contents

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 realise 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) attributes by becoming:

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

1. Subjects to be offered in 2022–2024

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* ITGS* 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* ITGS* 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 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 (IB DP) 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 about 3,500 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 Organisation 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 organisations 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.

OPTION 1

Students officially register with the IB to take official IB exams in at least 6 subjects. They will be considered
IB Diploma Programme students.

Students take IB exams in at least 6 subjects, complete TOK, an EE, and meet all IB CAS requirements (approx. 150 hours).

Students will not take H.I.S. final exams at the end of the two-year IB Diploma Programme – only official IB exams – that are assessed by IB examiners outside of the school.

Students receive an official IB Diploma and transcript indicating their results in the IB Courses that they completed.

In addition students receive the H.I.S. Diploma

OPTION 2

Students officially register with the IB for one or more IB exam(s) to earn an IB Course Certificate. They will be considered
IB Diploma Programme Courses students.

Students take IB exams in the subjects that they officially register in at the end of the two-year programme.

Students will take H.I.S. final exams in subjects other than those they have chosen as IB Courses at the end of the two-year programme.

Students must meet IB CAS requirements (approx. 150 hours) and can opt to complete full or modified TOK & EE components

Students receive an official IB transcript indicating their results in the IB Course(s) that they completed including TOK & EE if chosen.

In addition students receive the H.I.S. Diploma

OPTION 3

Students do not register with the IB for any IB exam(s). They will be considered
H.I.S. Diploma students.

Students fulfil the assessment requirements and take H.I.S. final exams in all their subjects at the end of the two-year programme.

Students must meet all IB CAS requirements (approx. 150 hours) and will be required to complete modified TOK & EE components

Students receive an official H.I.S. transcript indicating their results in the H.I.S. Courses that they completed.

Students receive the H.I.S. Diploma

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 approx.150 hours of 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 approx. 150 hours of 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." Both diploma and certificate candidates are required to participate in appropriate activities balanced evenly between the three components, averaging about three to four hours a week for a total of approx. 150 hours over the two years of the programme. 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 the 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 an good standard
C = Work of an satisfactory standard
D = Work of an 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.

		THEORY OF KNOWLEDGE					
	GRADE	**A**	**B**	**C**	**D**	**E**	No grade **N**
EXTENDED ESSAY	**A**	3	3	2	2	Failing condition	Failing condition
	B	3	2	2	1	Failing condition	Failing condition
	C	2	2	1	0	Failing condition	Failing condition
	D	2	1	0	0	Failing condition	Failing condition
	E	Failing condition	Failing condition	Failing condition	Failing condition	Failing condition	Failing condition
	No grade **N**	Failing condition	Failing condition	Failing condition	Failing condition	Failing condition	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 but the students must sometimes make compromise choices.

* 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
› ITGS 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
› ollow 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

US$1500 for language ab initio or film, US$1400 for all other subjects per year. For students moving schools during their programme, a one-off additional transfer fee of US$400 is charged.

Course fees are correct at the time of publication, but are subject to change.
More information is available at **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 Higher Level 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 Higher Level 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)

In 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).

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 13 works at higher level and 9 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
Total Class hours	**150**	**240**

Assessment model

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

1. 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.

2. 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.

3. 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 (hours)		Weighting of final grade	
		SL	HL	SL	HL
External					
Paper 1: Guided literary analysis		1.25	2.25	35%	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	1.75	35%	35%
HL Essay	Written coursework component: 1,200–1,500 word essay on one work studied.				20%
Internal					
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 6 works at higher level and 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 literary and non-literary text, 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

The language A: Language & 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 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
› evelop 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

In both Literature and Language & Literature courses, a balance will be achieved across the curriculum not only in connection with the genre of the texts studied and the period and place of their production, but also as regards the worldview of their authors, which may vary according to their gender, race, sexuality, beliefs and any other such component of their identities. This is to ensure that students are exposed to the diversity of forms the human experience can take.

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
Total Class hours	**150**	**240**

Assessment model

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

1. 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.

2. 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.

3. 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 (hours)		Weighting of final grade	
		SL	HL	SL	HL
External					
Paper 1: Guided literary analysis	Guided analysis of unseen literary passage/ passages from different text types.	1.25	2.25	35%	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	1.75	35%	25%
HL Essay	Written coursework component: 1,200–1,500 word essay on one work studied.				20%
Internal					
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 ab initio (SL) – German, French*, Spanish* and Mandarin*

The language ab initio course is a language acquisition course for students with no prior experience of the target language, or for those students with very limited previous experience.
Students develop the ability to communicate in the target language through the study of language, themes and texts. In doing so, they also develop conceptual understandings of how language works. Communication is evidenced through receptive, productive and interactive skills across a range of contexts and purposes that are appropriate to the level of the course.
The language ab initio syllabus is organized into five prescribed themes: identities, experiences, human ingenuity, social organization and sharing the planet. The language ab initio syllabus prescribes four topics for each of the five prescribed themes for a total of 20 topics that must be addressed in the language ab initio course.

Key features

- Only available at standard level (SL)
- The recommended teaching time to complete the course is 150 hours
- Knowledge of vocabulary and grammar (the what of language) is reinforced and extended by understanding audience, context, purpose, meaning and variation (the why and how of language)
- The development of international-mindedness is one of the key aims of the course
- The prescribed themes of the course are inspired by the transdisciplinary themes of the Primary Years Programme (PYP) and the global contexts of the Middle Years Programme (MYP)
- Students are exposed to a variety of authentic text types in relation to the prescribed themes and topics, as well as the content contained within the language-specific syllabuses
- Students produce a wide variety of oral and written texts for audiences, contexts and purposes associated with academic and personal interests
- Students are assessed both externally and internally
- External assessment consists of Paper 1: productive skills—writing (written responses to two required tasks) and Paper 2: receptive skills—with separate sections for listening (demonstrating understanding of three audio passages) and reading (demonstrating understanding of three written passages)
- Internal assessment consists of an individual oral assessment—productive and interactive skills (a presentation by the student and a follow-up discussion based on a visual stimulus linked to one of the prescribed themes of the course, and a general conversation with the teacher based on topics from at least one additional theme of the course)

Course Description:

The course gives students the opportunity to develop a variety of linguistic skills through specific language learning tasks, and also through topics on relevant cultures around the world. The main focus is on acquiring competency in the language for purposes and situations used in everyday social interaction. This means that grammar and vocabulary are practised while learning about a previously unknown culture.

The Students Will Learn:

- to communicate information and basic ideas clearly and effectively in a limited range of situations
- to express ideas with appropriate language and register
- to understand and use accurately the essential spoken and written forms of the language in a limited range of situations
- to show an awareness of some elements of the cultures in the language-speaking countries

Topic Areas:

- Identities
- Experiences
- Human ingenuity
- Social organization
- Sharing the planet

Assessment:

The students are assessed both internally and externally.
The external component represents 75% and is by means of three papers at the end of the course (Listening, Reading and Writing)
The internal assessment represents the further 25% and is in the form of an individual oral.
To prepare for the external and internal assessments, students are given mock orals, exams and assessments during class time.

ASSESSMENT COMPONENT	WEIGHTING
External assessment (2 hours 45 minutes)	75%
Paper 1 (1 hour) Productive skills—writing (30 marks) Two written tasks of 70–150 words each from a choice of three tasks, choosing a text type for each task from among those listed in the examination instructions.	25%
Paper 2 (1 hour 45 minutes) Receptive skills—separate sections for listening and reading (65 marks) Listening comprehension (45 minutes) (25 marks) Reading comprehension (1 hour) (40 marks) Comprehension exercises on three audio passages and three written texts, drawn from all five themes.	50%
Internal assessment This component is internally assessed by the teacher and externally moderated by the IB at the end of the course. Individual oral assessment A conversation with the teacher, based on a visual stimulus and at least one additional course theme. (30 marks)	25%

10.2. Group 2 – Language acquisition

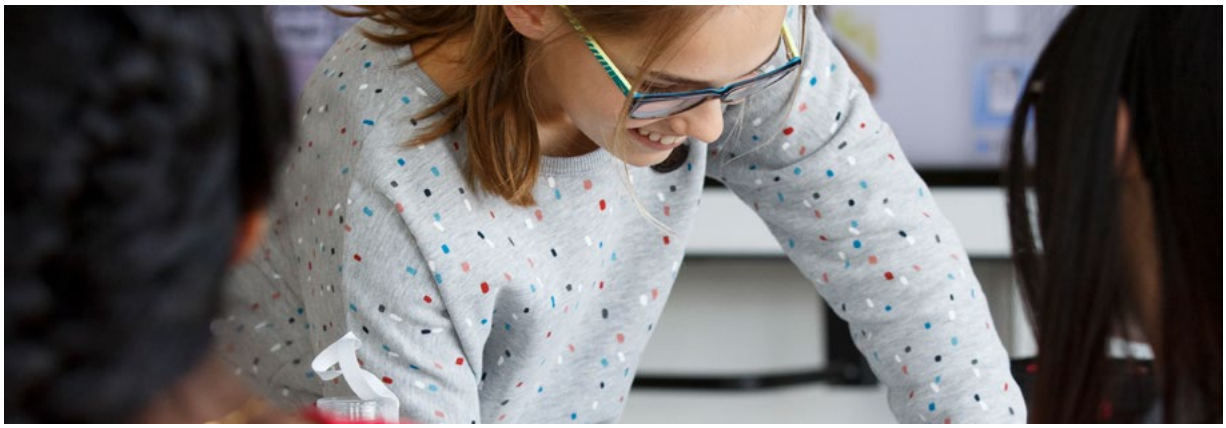
Language B
German B: Higher Level and Standard Level
Spanish B*: Standard Level

The language B Standard Level (SL) and language B Higher Level (HL) courses are language acquisition courses for students with some previous experience of the target language.
The distinction between language B SL and HL can been seen in the number of recommended teaching hours,

the level of competency the student is expected to develop in receptive, productive and interactive skills, and that HL students are required to study two literary works originally written in the target language.
Students develop the ability to communicate in the target language through the study of language, themes and texts. In doing so, they also develop conceptual understandings of how language works. Communication is evidenced through receptive, productive and interactive skills across a range of contexts and purposes that are appropriate to the level of the course (and beyond those for language ab initio).
The language B syllabus is organized into five prescribed themes: identities, experiences, human ingenuity, social organization and sharing the planet. Optional recommended topics and possible questions for each theme are presented in the guide, but are not prescribed.

Key features

- Available at standard (SL) and higher level (HL)
- The recommended teaching time to complete the course is 150 hours for SL and 240 hours for HL
- Knowledge of vocabulary and grammar (the what of language) is reinforced and extended by understanding audience, context, purpose, meaning and variation (the why and how of language)
- The development of international-mindedness is one of the key aims of the course
- The prescribed themes of the course are inspired by the transdisciplinary themes of the Primary Years Programme (PYP) and the global contexts of the Middle Years Programme (MYP)
- Students are exposed to a variety of authentic text types in relation to the prescribed themes and related course content
- Students describe situations, narrate events, make comparisons, explain problems, and state and support their personal opinions on a variety of topics relating to course content
- Students produce a wide variety of oral and written texts for audiences, contexts and purposes associated with academic and personal interests
- At HL, students are required to study two literary works originally written in the target language, and are expected to extend the range and complexity of the language they use and understand in order to communicate
- Students are assessed both externally and internally
- External assessment consists of Paper 1: productive skills—writing (a written response to a task) and Paper 2: receptive skills—with separate sections for listening (demonstrating understanding of three audio passages) and reading (demonstrating understanding of three written passages)
- Internal assessment at SL consists of an individual oral assessment—productive and interactive skills (a presentation by the student and a follow-up discussion based on a visual stimulus linked to one of the prescribed themes of the course, and a general conversation with the teacher based on at least one additional theme of the course)
- Internal assessment at HL consists of an individual oral assessment—productive and interactive skills (a presentation by the student and a follow-up discussion based on an extract from one of the literary works studied during the course, and a general conversation with the teacher using one or more of the five prescribed themes of the course as a starting point)



Course Description:

Language B is primarily a course aimed at the continued acquisition of German/Spanish, through listening, speaking, reading and writing activities for students with 4-5 years' experience at Higher level and 2-5 years at the Standard Level. The course will focus on material which stimulates knowledge through enjoyment and creativity.

The purpose of the study of the German / Spanish language B course is to help students with some previous experience to develop their oral and written skills up to a fairly sophisticated degree. By the end of the course, students should be able to understand and use German / Spanish in a range of contexts and for a range of purposes. The language B course will give students the opportunity to reach a high degree of ability to handle the language.

The themes are:

› Identities
› Experiences
› Human ingenuity
› Social organization
› Sharing the planet

Assessment:

Students will be assessed both internally and externally.

At both Higher and Standard Level, the internal assessment represents 25% of the final mark. This is comprised of an end-of-course individual oral. The external assessment consists of a Writing paper (worth 25 %) and a Listening und Reading paper at the end of the course (worth 50%).

In order to prepare for the external and internal assessments, students are given mock orals, exams and assessments throughout the two-year cycle.

It is important to note that study at Higher Level includes two literary texts.

ASSESSMENT COMPONENT	WEIGHTING
External assessment (3 hours SL, 3.5 hours HL)	75%
Paper 1 (75 min SL, 90 min HL) Productive skills—writing (30 marks) One writing task of 250–400 (SL) 450-600 (HL) words from a choice of three, each from a different theme, choosing a text type from among those listed in the examination instructions.	25%
Paper 2 (105 min SL, 120 min HL) Receptive skills—separate sections for listening and reading (65 marks) Listening comprehension (45 min SL 60 min HL) (25 marks) Reading comprehension (60 min SL & HL) (40 marks) Comprehension exercises on three audio passages and three written texts, drawn from all five themes.	50%
Internal assessment This component is internally assessed by the teacher and externally moderated by the IB at the end of the course. Individual oral assessment SL: A conversation with the teacher, based on a visual stimulus, followed by discussion based on an additional theme. (30 marks) HL: A conversation with the teacher, based on an extract from one of the literary works studied in class, followed by discussion based on one or more of the themes from the syllabus. (30 marks)	25%

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

I. Course description and aims

The IB Diploma Programme higher level history course aims to promote an understanding of history as a discipline, including the nature and diversity of sources, methods and interpretations. Students are encouraged to comprehend the present by reflecting critically on the past. They are further expected to understand historical developments at national, regional and international levels and learn about their own historical identity through the study of the historical experiences of different cultures. In addition, the course is designed to:

- encourage the systematic and critical study of human experience and behaviour; physical, economic and social environments; and the history and development of social and cultural institutions
- develop the capacity to identify, analyse critically and evaluate theories, concepts and arguments about the nature and activities of the individual and society
- enable students to collect, describe and analyse data used in studies of society; test hypotheses; and interpret complex data and source material
- promote an appreciation of the way learning is relevant to both the culture in which the student lives and the culture of other societies
- develop an awareness that human attitudes and beliefs are widely diverse and that the study of society requires an appreciation of such diversity
- enable the student to recognise that the content and methodologies of the subjects in group 3 are contestable and that their study requires the toleration of uncertainty

II. Curriculum model overview

COMPONENT	CLASS HOURS
Route 2 20th century world history—study one of three prescribed subjects › Peacemaking, peacekeeping—international relations 1918–36 › The Arab–Israeli conflict 1945–79 › Communism in crisis 1976–89	40
20th century world history—study two of the following topics › Causes, practices and effects of wars › Democratic states—challenges and responses › Origins and development of authoritarian and single-party states › Nationalist and independence movements in Africa and Asia and post–1945 Central and Eastern European states › The Cold War	90
Higher level option Study three sections in the selected option › Aspects of the history of Africa › Aspects of the history of the Americas › Aspects of the history of Asia and Oceania › Aspects of the history of Europe and the Middle East	90 (HL only)
Historical investigation	30

III. Assessment model

Assessment for history higher level

The IB assesses student work as direct evidence of achievement against the stated goals of the Diploma Programme courses, which are to provide students with:

› a broad and balanced, yet academically demanding, programme of study
› the development of critical-thinking and reflective skills
› the development of research skills
› the development of independent learning skills
› the development of intercultural understanding
› a globally recognised university entrance qualification

The assessments aim to test all students' knowledge and understanding of key concepts through various activities that demonstrate:

› knowledge and comprehension of specified content, such as an ability to recall and select relevant historical knowledge
› application and analysis, including the ability to apply historical knowledge as evidence
› synthesis and evaluation abilities
› the selection and use of historical skills.

Students' success in the history higher level course is measured by combining their grades on external and internal assessment.

On external assessments, students must be able to demonstrate an understanding of both basic facts and complex concepts related to the historical periods studied, depending on the chosen route of study. The internal assessment measures students' ability to use their own initiative to take on a historical inquiry.

Students should be able to develop and apply the skills of a historian by selecting and analysing a good range of source material and managing diverse interpretations. The activity demands that students search for, select, evaluate and use evidence to reach a relevant conclusion.

ASSESSMENT AT A GLANCE			
Type of assessment	**Format of assessment**	**Time (hours)**	**Grade percentage (%)**
External			HL 80 SL 70
Paper 1	Short answer/structured questions from one of three prescribed subjects	1 hour	HL 20 SL 30
Paper 2 Productive skills	two extended-response questions chosen from five topics	1.5 hours	HL 25 SL 45
Paper 3 HL only	Three extended-response questions	2.5 hours	HL 35
Internal			HL 20 SL 25
Study report	Historical investigation on any area of the syllabus		HL 20 SL 25

IV. Sample questions

HL

The following questions appeared in previous IB Diploma Programme history higher level examinations.
1. Using these sources and your own knowledge, analyse how and why Henry VI became King of Sicily in December 1194. (Route 1, paper 1)
2. Analyse the reasons for, and impact of, the Sunni/Shia divide. (Route 1, paper 2)
3. Compare and contrast the domestic policies of Disraeli and Gladstone.
(Route 2, paper 3 Europe and the Middle East)

SL

The following questions appeared in previous IB Diploma Programme history standard level examinations.
1. Using provided sources and your own knowledge, 2. Compare and contrast the parts played by Cuba and analyse how the Arab Muslims controlled the lands Vietnam in the Cold War. (Route 2, Paper 2) and people they had conquered. (Route 1, Paper 1)

Group 3 – Individuals & Societies
Business Management: Higher Level and Standard Level

I. Course description and aims

The business management course is designed to develop students' knowledge and understanding of business management theories, as well as their ability to apply a range of tools and techniques. Students learn to analyse, discuss and evaluate business activities at local, national and international levels. The course covers a range of organisations from all sectors, as well as the sociocultural and economic contexts in which those organisations operate.
The course covers the key characteristics of business organisation and environment, and the business functions of human resource management, finance and accounts, marketing and operations management. Through the exploration of six underpinning concepts (change, culture, ethics, globalisation, innovation and strategy), the course allows students to develop a holistic understanding of today's complex and dynamic business environment. The conceptual learning is firmly anchored in business management theories, tools and techniques and placed in the context of real world examples and case studies.
The course encourages the appreciation of ethical concerns, at both a local and global level. It aims to develop relevant and transferable skills, including the ability to: think critically; make ethically sound and well-informed decisions; appreciate the pace, nature and significance of change; think strategically; and undertake long term planning, analysis and evaluation. The course also develops subject-specific skills, such as financial analysis.

The aims of the business management course at HL and SL are to:
1. encourage a holistic view of the world of business
2. empower students to think critically and strategically about indify
3. promote the importance of exploring business issues from different cultural perspectives
4. enable the student to appreciate the nature and significance of change in a local, regional and global context
5. promote awareness of the importance of environmental, social and ethical factors in the actions of individuals and organisations
6. develop an understanding of the importance of innovation in a business environment.

II. Curriculum model overview

COMPONENT	CLASS HOURS
Unit 1: Business organisation and environment 1.1 Introduction to business management 1.2 Types of organisations 1.3 Organisational objectives 1.4 Stakeholders 1.5 External environment 1.6 Growth and evolution 1.7 Organisational planning tools (HL Only)	HL 50 SL 40
Unit 2: Human resource management 2.1 Functions and evolution of human resource management 2.2 Organisational structure 2.3 Leadership and management 2.4 Motivation 2.5 Organisational (corporate) culture (HL Only) 2.6 Industrial/employee relations (HL Only)	HL 30 SL 15
Unit 3: Finance and accounts 3.1 Sources of finance 3.2 Costs and revenues 3.3 Break-even analysis 3.4 Final accounts (some HL only) 3.5 Profitability and liquidity ratio analysis 3.6 Efficiency ratio analysis (HL only) 3.7 Cash flow 3.8 Investment appraisal (some HL only) 3.9 Budgets (HL only)	HL 50 SL 35
Unit 4: Marketing 4.1 The role of marketing 4.2 Marketing planning (including introduction to the four Ps) 4.3 Market research 4.4 The four Ps (product, price, promotion, place) 4.6 The extended marketing mix of seven Ps (HL only) 4.7 International marketing (HL only) 4.8 E-commerce	HL 50 SL 35
Unit 5: Operations management 5.1 The role of operations management 5.2 Production methods 5.3 Lean production and quality management (HL only) 5.4 Location 5.5 Production planning (HL only) 5.6 Research and development (HL only) 5.7 Crisis management and contingency planning (HL only)	HL 30 SL 10
Internal Assessment	HL 30 SL 15

III. Assessment model

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

1. Demonstrate knowledge and understanding of:
› the business management tools, techniques and theories specified in the syllabus content
› the six concepts that underpin the subject
› real-world business problems, issues and decisions
2. Demonstrate application and analysis of:
› knowledge and skills to a variety of real-world and functional business situations
› business decisions by explaining the issue(s) at stake, selecting and interpreting data, and applying appropriate tools, techniques, theories and concepts
3. Demonstrate synthesis and evaluation of:
› business strategies and practices, showing evidence of critical thinking
› business decisions, formulating recommendations
4. Demonstrate a variety of appropriate skills to:
› produce well-structured written material using business terminology
› select and use quantitative and qualitative business tools, techniques and methods
› select and use business material, from a range of primary and secondary sources.

ASSESSMENT AT A GLANCE			
Type of assessment	**Format of assessment**	**Time (hours)**	**Grade percentage (%)**
External		HL 4.5 SL 3	HL 75 SL 75
Paper 1	HL Structured and extended response questions SL Structured questions	HL 2.25 SL 1.25	HL 35 SL 40
Paper 2	two extended-response questions chosen from five topics	HL 2.25 SL 1.75	HL 40 SL 40
Paper 3 HL only	Four questions based on pre-seen case study	HL 1.25	HL 35
Internal		HL 30 SL 15	HL 20 SL 25
HL Research project SL Written commentary	HL Students research and report on an issue facing an organisation or a decision to be made by an organisation (or several organisations). Maximum 2,000 words. SL Students produce a written commentary based on three to five supporting documents about a real issue or problem facing a particular organisation. Maximum 1,500 words		HL 20 SL 25

IV. Sample questions

HL

- Analyse the appropriateness of a cost-plus pricing strategy for B-Pharma's drugs.
- Evaluate the effectiveness of the democratic leadership style of the partners at Hands.
- With reference to one or two organisation(s) that you have studied, discuss how marketing strategies may differ in two cultures that you are familiar with.

SL

- Apply the Boston Consulting Group (BCG) matrix to B-Pharma's product portfolio.
- Examine possible strategies for Dan Electro to prevent cash flow dificulties.
- With reference to one organisation that you have studied, examine what changes globalisation brings about in the management of human resources.

Group 3 – Individuals & Societies
Information Technology in a Global Society*: Higher Level and Standard Level

I. Course description and aims

The IB DP information technology in a global society (ITGS) course is the study and evaluation of the impacts of information technology (IT) on individuals and society. It explores the advantages and disadvantages of the access and use of digitized information at the local and global level. ITGS provides a framework for the student to make informed judgments and decisions about the use of IT within social contexts.

The aims of the ITGS standard level courses are to:

- enable the student to evaluate social and ethical considerations arising from the widespread use of IT by individuals, families, communities, organisations and societies at the local and global level
- develop the student's understanding of the capabilities of current and emerging IT systems and to evaluate their impact on a range of stakeholders
- enable students to apply their knowledge of existing IT systems to various scenarios and to make informed judgments about the effects of IT developments on them
- encourage students to use their knowledge of IT systems and practical IT skills to justify IT solutions for a specified client or end-user.
-

II. Curriculum model overview

COMPONENT	CLASS HOURS
Strand 1: Social and ethical significance › Reliability and integrity › Security › Privacy and anonymity › Intellectual property › Authenticity › The digital divide and equality of access › Surveillance › Globalisation and cultural diversity › Policies › Standards and protocols › People and machines › Digital citizenship	40
HL extension Social and ethical considerations linked to the two HL extension topics and annually issued case study.	20
Strand 2: Application to specified scenarios › Business and employment › Education and training › Environment › Health › Home and leisure › Politics and government	40
HL extension Scenarios based on real-life situations used to address specified IT developments in the two HL extension topics and annually issued case study.	35
Strand 3: IT systems › Hardware › Software › Networks › Internet › Personal and public communications › Multimedia/digital media › Databases › Spreadsheets, modelling and simulations › Introduction to project management	40

COMPONENT	CLASS HOURS
HL extension IT systems in organisations › Robotics, artificial intelligence and expert systems › Information systems specific to the annually issued case study	35
The project (practical application of IT skills) The application of skills and knowledge to develop an original IT product for a specified client.	30

III. Assessment model

Having followed the ITGS standard level course, students will be expected to demonstrate the following:

Knowledge and understanding of specified content

› Demonstrate an awareness of IT applications and developments in specified scenarios
› Demonstrate an awareness of the social and ethical significance of specified IT applications and developments
› Demonstrate technical knowledge of ITGS terminology, concepts and tools
› Demonstrate technical knowledge of IT systems
› Application and analysis
› Explain the impacts of IT applications and developments in specified scenarios
› Analyse the social and ethical significance of specified IT
› applications and developments
› Transfer IT knowledge and make connections between
› specific scenarios Synthesis and evaluation
› Evaluate local and global impacts of specified IT developments through individually researched studies
› Evaluate a solution involving IT to a specified problem using knowledge of IT systems
› Discuss the social and ethical implications of specified IT policies and developments
› Use of ITGS skills
› Demonstrate evidence of project management in the development of a well-organised product to resolve a specific issue
› Use IT tools and the product development life cycle (PDLC) to create an original product in consultation with a client
› Demonstrate evidence of the use of appropriate techniques to develop an original IT product.

ASSESSMENT AT A GLANCE			
Type of assessment	**Format of assessment**	**Time (hours)**	**Grade percentage (%)**
External		HL 4.75 SL 3	HL 80 SL 70
Paper 1	HL Four structured responses SL Three structured responses	HL 2.25 SL 1.25	HL 35 SL 40
Paper 2	Written response to previously unseen article	HL & SL 1.25	HL 25 SL 30
Paper 3 HL only	Four questions based on pre-seen case study	HL 1.25	HL 35

ASSESSMENT AT A GLANCE			
Internal		HL & SL 30	HL 20 SL 30
Written report	Development of an original IT product for a specified client		HL 20 SL 30

IV. Sample questions

HL

Questions based on stimulus material

› Identify two reasons why organisations continue to use legacy systems.
› Many organisations are developing intranets in an attempt to address the problems in their IT developments. To what extent are intranets likely to overcome these problems?
› Explain the purposes of the following in the home network:
› SSID
› Router
› Switch

SL

Questions based on stimulus material

› Describe the relationship between the server and a client in a network.
› A company is based at various geographical locations. The senior managing team is considering the use of web-based P2P networking in order to make business-related files available to its staff. To what extent would this be an effective way to share its business data?
› Describe the relationship of one primary stakeholder to the IT system.
› Evaluate the impact of the social/ethical issues on the relevant stakeholders.

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

I. Course description and aims

The IB Diploma Programme economics higher level course aims to provide students with a core knowledge of economics, encourage students to think critically about economics, promote an awareness and understanding of internationalism in economics and encourage students' development as independent learners. Alongside the empirical observations of positive economics, students of the subject are asked to formulate normative questions and to recognise their own tendencies for bias.

In addition, the course is designed to:

› encourage the systematic and critical study of human experience and behaviour; physical, economic and social environments; and the economics and development of social and cultural institutions
› develop the capacity to identify, analyse critically and evaluate theories, concepts and arguments about the nature and activities of the individual and society
› enable students to collect, describe and analyse data used in studies of society; test hypotheses; and interpret complex data and source material
› promote an appreciation of the way learning is relevant to both the culture in which the student lives and the culture of other societies
› develop an awareness that human attitudes and beliefs are widely diverse and that the study of society requires an appreciation of such diversity
› enable the student to recognise that the content and methodologies of the subjects in group 3 are

contestable and that their study requires the toleration of uncertainty.

II. Curriculum model overview

COMPONENTS
Introduction to economics
Microeconomics Markets › Markets › Elasticities › Theory of the firm (HL extension) › Market failure
Macroeconomics › Measuring national income › Introduction to development › Macroeconomic models › Demand-side and supply-side policies › Unemployment and inflation › Distribution of income
International economics › Reasons for trade › Free trade and protectionism › Economic integration › World Trade Organisation (WTO) › Balance of payments › Exchange rates › Balance of payment problems › Terms of trade
Development economics › Sources of economic growth and/or development › Consequences of growth › Barriers to economic growth and/or development › Growth and development strategies › Evaluation of growth and development strategies

III. Assessment model

The IB assesses student work as direct evidence of achievement against the stated goals of the Diploma Programme courses, which are to provide students with:

› a broad and balanced, yet academically demanding, programme of study
› the development of critical-thinking and reflective skills
› the development of research skills
› the development of independent learning skills
› the development of intercultural understanding
› a globally recognised university entrance qualification.

The assessments aim to test all students' knowledge and understanding of key concepts through various activities that demonstrate their ability to:

- understand and apply economic concepts and theories to a range of circumstances and a variety of situations
- analyse information through the use of economic concepts and theories
- evaluate concepts and theories from different economic perspectives.

Students' success in the economics course is measured by combining their grades on external and internal assessment.

In external assessment components, students must be able to demonstrate an understanding of both basic facts and complex concepts related to the full economics syllabus. The internal assessment measures students' ability to produce a portfolio of four commentaries—each 650 to 750 words—based on a news media extract that links economic theory to a real-world situation. Three of the four commentaries must have as their main focus a different section of the syllabus, although commentaries may reference other sections. A fourth commentary can focus either on a single section or on two or more sections of the syllabus.

ASSESSMENT AT A GLANCE

Type of assessment	Format of assessment	Time (hours)	Grade percentage (%)
External			HL 80 SL 75
Paper 1	HL Four extended-response questions based on all five sections of the syllabus SL Three structured responses	HL & SL 1 hour	SL 75
Paper 2	HL Six short-answer questions based on all five sections of the syllabus SL A data-response paper on all five sections of the syllabus	HL 1 SL 2	HL 25 SL 50
Paper 3 HL only	A data-response paper on all five sections of the syllabus	HL 2	HL 35
Internal			HL 20 SL 25
Portfolio	A portfolio of four commentaries		HL 20 SL 25

IV. Sample Questions

HL

1. (a) Using examples, describe various sources of funds available to developing countries through trade and aid. (b) Evaluate trade and aid as means of achieving economic growth and development. (Paper 1)

2. Explain why Veblen goods are an exception to the law of demand. (Paper 2)

SL

The following questions appeared in previous IB Diploma Programme economics standard level examinations.*

1. (a) Explain the concept of elasticity of demand.

1. (b) Evaluate the significance of elasticity of demand to businesses and government. (Paper 1)

Group 3 – Individuals & Societies
Psychology*: Higher Level and Standard Level

I. Course description and aims

The IB Diploma Programme higher level psychology course aims to develop an awareness of how research findings can be applied to better understand human behaviour and how ethical practices are upheld in psychological inquiry. Students learn to understand the biological, cognitive and sociocultural influences on human behaviour and explore alternative explanations of behaviour. They also understand and use diverse methods of psychological inquiry.

In addition, the course is designed to:

- encourage the systematic and critical study of human experience and behaviour; physical, economic and social environments; and the history and development of social and cultural institutions
- develop the capacity to identify, analyse critically and evaluate theories, concepts and arguments about the nature and activities of the individual and society
- enable students to collect, describe and analyse data used in studies, test hypotheses; and interpret complex data and source material
- enable the student to recognise that the content and methodologies are contestable and that their study requires the toleration of uncertainty
- develop an awareness of how psychological research can be applied for the better understanding of human behaviour
- ensure that ethical practices are upheld in psychological inquiry
- develop an understanding of the biological, cognitive and sociocultural influences on human behaviour
- develop an understanding of alternative explanations of behavior
- understand and use diverse methods of psychological inquiry.

II. Curriculum model overview

COMPONENTS	CLASS HOURS
Core › The biological level of analysis › The cognitive level of analysis › The sociocultural level of analysis	90
Options 30 hours of instruction on two(HL) one(SL) additional topic(s) › Abnormal psychology › Developmental psychology › Health psychology › Psychology of human relationships › Sport psychology	HL 60 SL 30
HL extension Qualitative research in psychology	50
Experimental study Introduction to experimental research methodology	HL 40 SL 30

III. Assessment model

Assessment for psychology

The IB assesses student work as direct evidence of achievement against the stated goals of the Diploma Programme courses, which are to provide students with:

› a broad and balanced, yet academically demanding, programme of study
› the development of critical-thinking and reflective skills
› the development of research skills
› the development of independent learning skills
› the development of intercultural understanding
› a globally recognised university entrance qualification.

The assessments aim to test all students' knowledge and understanding of key concepts through various activities that demonstrate:

› knowledge and comprehension of specified content, research methods, theories, such as key concepts, biological, cognitive and sociocultural levels of analysis
› application and analysis, including using psychological research and psychological concepts to formulate an argument in response to a specific question
› synthesis and evaluation of psychological theories, empirical studies, and research methods used to investigate behaviour
› selection and use of skills appropriate to psychology, the acquisition of knowledge, skills required for experimental design, data collection and presentation, data analysis and interpretation
› data analysis using an appropriate inferential statistical test and write an organised response.
› Students' success in the psychology higher level course is measured by combining their grades on external and internal assessment.

On external assessments students must be able to demonstrate an understanding of both basic facts and complex concepts related to the biological, cognitive and sociocultural levels of analysis. Students in higher level courses are also assessed on their knowledge and understanding of qualitative research. For their internal assessment, psychology higher level students plan, undertake and report on a simple experimental study.

ASSESSMENT AT A GLANCE			
Type of assessment	**Format of assessment**	**Time (hours)**	**Grade percentage (%)**
External			HL 80 SL 75
Paper 1	HL & SL Question response and an essay	HL & SL 2 hours	HL 35 SL 50
Paper 2	HL Answer 2 of 15 questions in essay form SL Answer 1 of 15 questions in essay form	HL 2 SL 1	HL 25 SL 25
Paper 3 HL only	Answer three questions	HL 1	HL 20
Internal			HL 20 SL 25
Portfolio	A report of a simple experimental study conducted by the student		HL 20 SL 25

IV. Sample Questions

HL

The following questions appeared in previous IB Diploma Programme psychology higher level examinations.

1. To what extent does genetic inheritance influence behaviour? Use relevant research studies in your response. (Paper 1)

2. Evaluate two research studies investigating the role of communication in maintaining relationships. (Paper 2)

3. The study outlined above uses the phrase "inductive content analysis". Explain the advantages and disadvantages of using this research strategy in the context of this specific study. (Paper 3, with regard to a supplied study)

SL

The following questions appeared in previous IB Diploma Programme psychology standard level examinations.

1. Discuss the use of one research method (e.g. experiments, case studies) in the cognitive level of analysis. Use relevant research studies in your response. (Paper 1)
2. Discuss how biological, or cognitive, or socio-cultural factors influence psychological disorders. (Paper 2)
3. Evaluate one theory of motivation in sport. (Paper 2)

Group 3 – Individuals & Societies
Philosophy*: Standard Level

I. 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:

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

II. Curriculum model overview

COMPONENTS	CLASS HOURS
Core theme The core theme "Being human" is compulsory for all students.	50
Optional themes Students are required to study one theme from the following list. 1. Aesthetics 2. Epistemology 3. Ethics 4. Philosophy and contemporary society 5. Philosophy of religion 6. Philosophy of science 7. Political philosophy	40
Prescribed text Students are required to study one text from the "IB list of prescribed philosophical texts".	40
Internal assessment Students are required to produce a philosophical analysis of a non-philosophical stimulus.	20

III. Assessment model

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

1. 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.

2. 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.

3. 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.

4. 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, organisation and referencing.

ASSESSMENT AT A GLANCE			
Type of assessment	**Format of assessment**	**Time (hours)**	**Grade percentage (%)**
External		2.75	75
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
Internal		20	25
Analysis	Students are required to complete a philosophical analysis of a non-philosophical stimulus.	20	25

IV. 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

I. Course description and aims

Biology is the study of life. The vast diversity of species makes biology both an endless source of fascination and a considerable challenge. Biologists attempt to understand the living world at all levels from the micro to the macro using many different approaches and techniques. Biology is still a young science and great progress is expected in the 21st century. This progress is important at a time of growing pressure on the human population and the environment.
By studying biology in the DP students should become aware of how scientists work and communicate with each other. While the scientific method may take on a wide variety of forms, it is the emphasis on a practical approach through experimental work that characterises the sciences. Teachers provide students with opportunities to design investigations, collect data, develop manipulative skills, analyse results, collaborate with peers and evaluate and communicate their findings.
Through the overarching theme of the nature of science, the aims of the DP biology course are to enable students to:

1. appreciate scientific study and creativity within a global context through stimulating and challenging opportunities
2. acquire a body of knowledge, methods and techniques that characterise science and technology
3. apply and use a body of knowledge, methods and techniques that characterise science and technology

4. develop an ability to analyse, evaluate and synthesize scientific information
5. develop a critical awareness of the need for, and the value of, effective collaboration and communication during scientific activities
6. develop experimental and investigative scientific skills including the use of current technologies
7. develop and apply 21st century communication skills in the study of science
8. become critically aware, as global citizens, of the ethical implications of using science and technology
9. develop an appreciation of the possibilities and limitations of science and technology
10. develop an understanding of the relationships between scientific disciplines and their influence on other areas of knowledge.

II. Curriculum model overview

COMPONENTS	CLASS HOURS
Core	95
1. Cell biology	15
2. Molecular biology	21
3. Genetics	15
4. Ecology	12
5. Evolution and biodiversity	12
6. Human physiology	20
Additional HL	60
7. Nucleic acids	9
8. Metabolism, cell respiration and photosynthesis	14
9. Plant biology	13
10.Genetics and evolution	8
11.Animal physiology	16
Option (Choice of one out of four)	25
A. Neurobiology and behaviour	25
B. Biotechnology and bioinformatics	25
C. Ecology and conservation	25
D. Human physiology	25
Practical scheme of work	HL 60 SL 40
Prescribed and other practical activities	HL 40 SL 20
Individual investigation	10
Group 4 project	10

The group 4 project

The group 4 project is a collaborative activity where students from different group 4 subjects, within or between schools, work together. It allows for concepts and perceptions from across disciplines to be shared while appreciating the environmental, social and ethical implications of science and technology. It can be practically or theoretically based and aims to develop an understanding of the relationships between scientific disciplines and their influence on other areas. The emphasis is on interdisciplinary cooperation and the scientific processes.

III. Assessment model

It is the intention of this course that students are able to fulfill the following assessment objectives:

1. Demonstrate knowledge and understanding of:

› facts, concepts, and terminology
› methodologies and techniques
› communicating scientific information.

2. Apply:

› facts, concepts, and terminology
› methodologies and techniques
› methods of communicating scientific information.

3. Formulate, analyse and evaluate:

› hypotheses, research questions and predictions methodologies and techniques
› primary and secondary data
› scientific explanations.

4. Demonstrate the appropriate research, experimental, and personal skills necessary to carry out insightful and ethical investigations.

ASSESSMENT AT A GLANCE			
Type of assessment	**Format of assessment**	**Time (hours)**	**Grade percentage (%)**
External		2.75	75
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
Internal		20	25
Analysis	Students are required to complete a philosophical analysis of a non-philosophical stimulus.	20	25

IV. Sample questions

HL

› Membrane proteins of mice cells were marked with green and membrane proteins of human cells were marked with red. The cells were fused together. What would be seen after two hours? (Paper 1)

› The species is the basis for naming and classifying organism. o Explain how new species can emerge by
  – directional selection
  – disruptive selection
  – polyploidy.
  – Outline the advantages to scientists of the binomial system for naming species.
  –Describe the use of dichotomous keys for the identification of specimens. (Paper 2)

› Brain death is a clinical diagnosis based on the absence of neurological function, with a known irreversible cause of coma.

– Explain a named method to assess brain damage.
– Distinguish between a reflex arc and other responses by the nervous system.
– Describe the events that occur in the nervous system when something very hot is touched.(Paper 3)

SL

› Cyclins were discovered by Timothy R. Hunt in 1982 while studying sea urchins. What is a function of cyclins? (Paper 1)
› Antibiotics can be used to treat bacterial infections in human tissues because of differences in cell structure between prokaryotes and eukaryotes.
  – Distinguish between the structure of prokaryotes and eukaryotes.
  – Evaluate the drug tests that Florey and Chain carried out on penicillin.
  – Explain the reasons for the ineffectiveness of antibiotics in the treatment of viral diseases (Paper 2)
› The company BASF produces a genetically modified potato called Amflora. Outline the purpose of modifying the potato. (Paper 3)

Group 4 – Sciences
Chemistry: Higher Level and Standard Level

I. Course description and aims

Chemistry is an experimental science that combines academic study with the acquisition of practical and investigational skills. Chemical principles underpin both the physical environment in which we live and all biological systems. Chemistry is often a prerequisite for many other courses in higher education, such as medicine, biological science and environmental science.
Both theory and practical work should be undertaken by all students as they complement one another naturally, both in school and in the wider scientific community. The DP chemistry course allows students to develop a wide range of practical skills and to increase facility in the use of mathematics. It also allows students to develop interpersonal and information technology skills, which are essential to life in the 21st century.
By studying chemistry students should become aware of how scientists work and communicate with each other. While the scientific method may take on a wide variety of forms, it is the emphasis on a practical approach through experimental work that characterises the subject.
Teachers provide students with opportunities to develop manipulative skills, design investigations, collect data, analyse results and evaluate and communicate their findings.

Through the overarching theme of the nature of science, the aims of the DP chemistry course are to enable students to:

1. appreciate scientific study and creativity within a global context through stimulating and challenging opportunities
2. acquire a body of knowledge, methods and techniques that characterise science and technology
3. apply and use a body of knowledge, methods and techniques that characterise science and technology
4. develop an ability to analyse, evaluate and synthesize scientific information
5. develop a critical awareness of the need for, and the value of, effective collaboration and communication during scientific activities
6. develop experimental and investigative scientific skills including the use of current technologies
7. develop and apply 21st century communication skills in the study of science
8. become critically aware, as global citizens, of the ethical implications of using science and technology
9. develop an appreciation of the possibilities and limitations of science and technology
10. develop an understanding of the relationships between scientific disciplines and their influence on other areas of knowledge.

II. Curriculum model overview

COMPONENTS	CLASS HOURS
Core	95
1. Stoichiometric relationships	13.5
2. Atomic structure	6
3. Periodicity	6
4. Chemical bonding and structure	13.5
5. Energetics/thermochemistry	9
6. Chemical kinetics	7
7. Equilibrium	4.5
8. Acids and bases	6.5
9. Redox processes	8
10. Organic chemistry	11
11. Measurement and data processing	10
Additional HL	60
12. Atomic structure	2
13. The periodic table—the transition metals 14.Chemical bonding and structure	4
15. Energetics/thermochemistry	7
16. Chemical kinetics	7
17. Equilibrium	6
18. Acids and bases	4
19.Redox processes	10
20.Organic chemistry	6
21.Measurement and analysis	12
Option (Choice of one out of four)	25
A. Materials	25
B. Biochemistry	25
C. Energy	25
D. Medicinal chemistry	25
Practical scheme of work	HL 60 SL 40
Prescribed and other practical activities	HL 40 SL 20
Individual investigation	10
Group 4 project	10

The group 4 project

The group 4 project is a collaborative activity where students from different group 4 subjects, within or between schools, work together. It allows for concepts and perceptions from across disciplines to be shared while appreciating the environmental, social and ethical implications of science and technology. It can be practically or theoretically based and aims to develop an understanding of the relationships between scientific disciplines and their influence on other areas. The emphasis is on interdisciplinary cooperation and the scientific processes.

III. Assessment model

Studying this course, students should be able to fulfill the following assessment objectives:

1. Demonstrate knowledge and understanding of:
› facts, concepts, and terminology
› methodologies and techniques
› communicating scientific information.

2. Apply:
› facts, concepts, and terminology
› methodologies and techniques
› methods of communicating scientific information.

3. Formulate, analyse and evaluate:
› hypotheses, research questions and predictions methodologies and techniques
› primary and secondary data
› scientific explanations.

4. Demonstrate the appropriate research, experimental, and personal skills necessary to carry out insightful and ethical investigations.

ASSESSMENT AT A GLANCE			
Type of assessment	**Format of assessment**	**Time (hours)**	**Grade percentage (%)**
External			80
Paper 1	multiple-choice questions	HL 1 SL .75	20
Paper 2	Data-based, short answer and extended response questions	HL 2,25 SL 1.25	HL 36 SL 40
Paper 3	Data-based, short answer and extended response questions	HL 1.25 SL 1	HL 24 SL 40
Internal		10	20
Individual investigation	Investigation and write-up of 6 to 12 pages	10	20

IV. Sample questions

HL

What is the sum of the coefficients when the equation for the combustion of ammonia is balanced using the smallest possible whole numbers?

___ NH_3 (g) + ___ O_2 (g) ___ N_2 (g) + ___ H_2O (g)

A. 6

B. 12

C. 14

D. 15 (Paper 1)

The two isomers of $[Pt(NH_3)2Cl_2]$ are crystalline. One of the isomers is widely used in the treatment of cancer.

i. Draw both isomers of the complex,

ii. Explain the polarity of each isomer using a diagram of each isomer to support your answer,

iii. State a suitable method (other than looking at dipole moments) to distinguish between the two isomers

iv. Compare and contrast the bonding types formed by nitrogen in $[Pt(NH_3)_2Cl_2]$ (Paper 2)

SL

› What is the total number of atoms in 0.50 mol of 1,4-diaminobenzene, $H_2NC_6H_4NH_2$?

A. 16.0×10^{23}

B. 48.0×10^{23}

C. 96.0×10^{23}

D. 192.0×10^{23}

(Avogadro's constant (L or NA) = 6.0×10^{23} mol–1.) (Paper 1)

Many automobile manufacturers are developing vehicles that use hydrogen as a fuel.

1. Suggest why such vehicles are considered to cause less harm to the environment than those with internal combustion engines.

2. Hydrogen can be produced from the reaction of coke with

steam: C(s)+2H O(g) 2H (g)+CO (g)

Using information from section 12 of the data booklet, calculate the change in enthalpy, ΔH, in kJ mol–1, for this reaction. (Paper 2)

Group 4 – Sciences
Physics: Higher Level and Standard Level

I. Course description and aims

Physics is the most fundamental of the experimental sciences, as it seeks to explain the universe itself, from the very smallest particles to the vast distances between galaxies. Despite the exciting and extraordinary development of ideas throughout the history of physics, observations remain 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 helping us better understand the natural world, physics gives us the ability to alter our environments. This raises the issue of the impact of physics on society, the moral and ethical dilemmas, and the social, economic and environmental implications of the work of physicists.

By studying physics students should become aware of how scientists work and communicate with each other. While the scientific method may take on a wide variety of forms, it is the emphasis on a practical approach through experimental work that characterises the subject. Teachers provide students with opportunities to develop manipulative skills, design investigations, collect data, analyse results and evaluate and communicate their findings.

Through the overarching theme of the nature of science, the aims of the DP physics course are to enable students to:

1. appreciate scientific study and creativity within a global context through stimulating and challenging opportunities
2. acquire a body of knowledge, methods and techniques that characterise science and technology
3. apply and use a body of knowledge, methods and techniques that characterise science and technology
4. develop an ability to analyse, evaluate and synthesize scientific information
5. develop a critical awareness of the need for, and the value of, effective collaboration and communication during scientific activities
6. develop experimental and investigative scientific skills including the use of current technologies
7. develop and apply 21st century communication skills in the study of science
8. become critically aware, as global citizens, of the ethical implications of using science and technology
9. develop an appreciation of the possibilities and limitations of science and technology
10. develop an understanding of the relationships between scientific disciplines and their influence on other areas of knowledge.

II. Curriculum model overview

COMPONENTS	CLASS HOURS
Core	95
1. Measurements and uncertainties	5
2. Mechanics	22
3. Thermal physics	11
4. Waves	15
5. Electricity and magnetism	15
6. Circular motion and gravitation	5
7. Atomic, nuclear and particle physics	14
8. Energy production	8
Additional HL	60
9. Wave phenomena	17
10. Fields	11
11. Electromagnetic induction	16
12. Quantum and nuclear physics	16
Option (Choice of one out of four)	25
A. Relativity	25
B. Engineering physics	25
C. Imaging	25
D. Astrophysics	25
Practical scheme of work	HL 60 SL 40
Prescribed and other practical activities	HL 40 SL 20
Individual investigation	10
Group 4 project	10

The group 4 project

The group 4 project is a collaborative activity where students from different group 4 subjects, within or between schools, work together. It allows for concepts and perceptions from across disciplines to be shared while appreciating the environmental, social and ethical implications of science and technology. It can be practically or theoretically based and aims to develop an understanding of the relationships between scientific disciplines and their influence on other areas. The emphasis is on interdisciplinary cooperation and the scientific processes.

III. Assessment model

It is the intention of this course that students are able to fulfill the following assessment objectives:

1. Demonstrate knowledge and understanding of:

› facts, concepts, and terminology
› methodologies and techniques
› communicating scientific information.

2. Apply:

› facts, concepts, and terminology
› methodologies and techniques
› methods of communicating scientific information.

3. Formulate, analyse and evaluate:
› hypotheses, research questions and predictions methodologies and techniques
› primary and secondary data
› scientific explanations.

4. Demonstrate the appropriate research, experimental, and personal skills necessary to carry out insightful and ethical investigations.

ASSESSMENT AT A GLANCE			
Type of assessment	**Format of assessment**	**Time (hours)**	**Grade percentage (%)**
External			80
Paper 1	multiple-choice questions	HL 1 SL .75	20
Paper 2	Short answer and extended response questions (Core plus AHL for HL)	HL 2,25 SL 1.25	HL 36 SL 40
Paper 3	Data- and practical-based questions plus, short answer and extended response questions on the option	HL 1.25 SL 1	HL 24 SL 36
Internal		10	20
Individual investigation	Investigation and write-up of 6 to 12 pages	10	20

IV. Sample questions

HL

› Why is wave-particle duality used in describing the properties of light?
A. Light is both a wave and a particle
B. Both wave and particle models can explain all the properties of light
C. Different properties of light can be more clearly explained by using one of the wave or particle models
D. Scientists feel more confident when using more than one model to explain a phenomenon
(Paper 1)

› The tower is 120m high with an internal diameter of 3.5m. When most of the air has been removed, the pressure in the tower is 0.96 Pa.
Determine the number of molecules of air in the tower when the temperature of the air is 300 K. (Paper 2)

› The streamlines above the airfoil are closer to each other than the streamlines below the airfoil. Suggest why this implies that the speed of the air above the airfoil is greater than the speed of air below the airfoil. (Paper 3)

SL

› An object falls freely from rest through a vertical distance of 44.0m in a time of 3.0s. What value should be quoted for the acceleration of free-fall? (Paper 1)

A. 9.778ms-2
B. 9.780ms-2
C. 9.78ms-2
D. 9.8ms-2

› There is a suggestion that the temperature of the Earth may increase if the use of fossil fuels is not reduced over the coming years. Explain, with reference to the enhanced greenhouse effect, why this temperature increase may occur. (Paper 2)

› In an experiment to measure the specific heat capacity of a metal, a piece of metal is placed inside a container of boiling water at 100°C. The metal is then transferred into a calorimeter containing water at a temperature of 10°C. The final equilibrium temperature of the water was measured. One source of error in this experiment is that the small mass of boiling water will be transferred to the calorimeter along with the metal.
(a) Suggest the effect of the error on the measured value of the specific heat capacity of the metal
(b) State one other source of error for this experiment (Paper 3)

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

I. Course description and aims

The IB DP computer science HL & SL course requires an understanding of the fundamental concepts of computational thinking as well as knowledge of how computers and other digital devices operate. The course, underpinned by conceptual thinking, draws on a wide spectrum of knowledge, and enables and empowers innovation, exploration and the acquisition of further knowledge. Students study how computer science interacts with and influences cultures, society and how individuals and societies behave, and the ethical issues involved. During the course the student will develop computational solutions. This will involve the ability to:

› identify a problem or unanswered question
› design, prototype and test a proposed solution
› liaise with clients to evaluate the success of the proposed solution
› and make recommendations for future developments. The aims of the computer science HL courses are to:
› provide opportunities for study and creativity within a global context that will stimulate and challenge students developing the skills necessary for independent and lifelong learning
› provide a body of knowledge, methods and techniques that characterise computer science
› enable students to apply and use a body of knowledge, methods and techniques that characterise computer science
› demonstrate initiative in applying thinking skills critically to identify and resolve complex problems
› engender an awareness of the need for, and the value of, effective collaboration and communication in resolving complex problems
› develop logical and critical thinking as well as experimental, investigative and problem-solving skills
› develop and apply the students' information and communication technology skills in the study of computer science to communicate information confidently and effectively
› raise awareness of the moral, ethical, social, economic and environmental implications of using science and technology
› develop an appreciation of the possibilities and limitations associated with continued developments in IT systems and computer science
› encourage an understanding of the relationships between scientific disciplines and the overarching nature of the scientific method.

II. Curriculum model overview

COMPONENTS	CLASS HOURS
Core syllabus content SL/HL core › Topic 1: System fundamentals › Topic 2: Computer organisation › Topic 3: Networks › Topic 4: Computational thinking, problem-solving and programming	80
HL extension › Topic 5: Abstract data structures › Topic 6: Resource management › Topic 7: Control Case study Additional subject content introduced by the annually issued case study	45 30
Option SL/HL core	30
HL extension Students study one of the following options: › Option A: Databases › Option B: Modelling and simulation › Option C: Web science › Option D: Object-oriented programming (OOP)	15
Internal assessment Solution Practical application of skills through the development of a product and associated documentation	30
Group 4 project	10

III. Assessment model

Having followed either the computer science higher or standard level course, students will be expected to:

Know and understand:

› relevant facts and concepts
› appropriate methods and techniques
› computer science terminology
› methods of presenting information.

Apply and use:

› relevant facts and concepts
› relevant design methods and techniques
› terminology to communicate effectively
› appropriate communication methods to present information.

Construct, analyse, evaluate and formulate:

› success criteria, solution specifications including task outlines, designs and test plans
› appropriate techniques within a specified solution.

Demonstrate the personal skills of cooperation and perseverance as well as appropriate technical skills for effective problem-solving in developing a specified product.

ASSESSMENT AT A GLANCE			
Type of assessment	**Format of assessment**	**Time (hours)**	**Grade percentage (%)**
External			HL 80 SL 70
Paper 1	› Section A consists of several compulsory short answer questions. › Section B consists of five compulsory structured questions.	2hrs 10min.	
Paper 2	An examination paper of between three and seven compulsory question; linked to the option studied.	1hr, 20min.	
Internal			HL 20 SL 30
Written commentary	A report of The development of a computational solution. Students must produce: › a cover page that follows the prescribed format › a product supporting documentation (word limit 2,000 words).	30hrs	
Group 4 project	To be assessed using the criterion Personal skills.	10hrs	

IV. Sample questions

HL

› Draw the representation of the binary search tree if the following data were inserted in this order:
› FALCON, CANARY, PIGEON, TURKEY, OSPREY.
› Discuss the methods used by criminals to hide or disguise certain files. For each method, identify the countermeasures that can be taken by a computer forensic scientist.

SL

The colour of a pixel can be stored as a 16-bit integer.
(a) State how many different colours can be represented in a 16-bit integer field.
(b) State whether this storage system for colour values is digital or analog.
(c) Outline one advantage and one disadvantage of using 32-bits per-pixel to store colours instead of 16-bits per-pixel.
› State the output of the following code fragment: double n= 1234.5678; double p = math. floor((n*100)/100); output (p); Recall that math.floor(3.7) produces the integer result 3.

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 are 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 generalization.

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 generalization
› 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, inter- national 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 generalization.
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
Total teaching hours	**150**	**240**

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					
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. 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%
Internal					
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 generalizations. 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
Total teaching hours	**150**	**240**

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					
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					
Exploration		15	15	20%	20%

10.6. Group 6 – The Arts
Visual Arts: Higher Level and Standard Level

I. Course description and aims

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

The role of visual arts teachers should be to actively and carefully organise learning experiences for the students, directing their study to enable them to reach their potential and satisfy the demands of the course. Students should be empowered to become autonomous, informed and skilled visual artists.
The aims of the arts subjects are to enable students to:

1. enjoy lifelong engagement with the arts
2. become informed, reflective and critical practitioners in the arts
3. understand the dynamic and changing nature of the arts
4. explore and value the diversity of the arts across time, place and cultures
5. express ideas with confidence and competence
6. develop perceptual and analytical skills.

In addition, the aims of the visual arts course at SL and HL are to enable students to:

7. make artwork that is influenced by personal and cultural contexts
8. become informed and critical observers and makers of visual culture and media
9. develop skills, techniques and processes in order to communicate concepts and ideas.

II. Curriculum model overview

COMPONENTS	CLASS HOURS
Visual arts in context › Examine and compare the work of artists from different cultural contexts. › Consider the contexts influencing their own work and the work of others. › Make art through a process of investigation, thinking critically and experimenting with techniques. › Apply identified techniques to their own developing work. › Develop an informed response to work and exhibitions they have seen and experienced. › Begin to formulate personal intentions for creating and displaying their own artworks.	SL 50 HL 80
Visual arts methods › Look at different techniques for making art. › Investigate and compare how and why different techniques have evolved and the processes involved. › Experiment with diverse media and explore techniques for making art. › Develop concepts through processes informed by skills, techniques and media. › Evaluate how their ongoing work communicates meaning and purpose. › Consider the nature of "exhibition", and think about the process of selection and the potential impact of their work on different audiences.	SL 50 HL 80
Communicating visual arts › Explore ways of communicating through visual and written means. › Make artistic choices about how to most effectively communicate knowledge and understanding. › Produce a body of artwork through a process of reflection and evaluation, showing a synthesis of skill, media and concept. › Select and present resolved works for exhibition. › Explain the ways in which the works are connected. › Discuss how artistic judgments impact the overall presentation.	SL 50 HL 80

Throughout the course students are required to maintain a visual arts journal. Although sections of the journal will be selected, adapted and presented for assessment, the journal itself is not directly assessed or moderated. It is, however, regarded as a fundamental activity of the course.

III. Assessment model

Having followed the visual arts course, students are expected to:

1. Demonstrate knowledge and understanding of specified content

› Identify various contexts in which the visual arts can be created and presented
› Describe artwork from differing contexts, and identify the ideas, conventions and techniques employed by the art-makers
› Recognise the skills, techniques, media, forms and processes associated with the visual arts
› Present work, using appropriate visual arts language, as appropriate to intentions

2. Demonstrate application and analysis of knowledge and understanding

› Express concepts, ideas and meaning through visual communication
› Analyse artworks from a variety of different contexts
› Apply knowledge and understanding of skills, techniques, media, forms and processes related to art-making

3. Demonstrate synthesis and evaluation

› Critically analyse and discuss artworks created by themselves and others and articulate an informed personal response
› Formulate personal intentions for the planning, development and making of artworks that consider how meaning can be conveyed to an audience
› Demonstrate the use of critical reflection to highlight success and failure in order to progress work
› Evaluate how and why art-making evolves and justify the choices made in their own visual practice

4. Select, use and apply a variety of appropriate skills and techniques

› Experiment with different media, materials and techniques in art-making
› Make appropriate choices in the selection of images, media, materials and techniques in art-making
› Demonstrate technical proficiency in the use and application of skills, techniques, media, images, forms and processes
› Produce a body of resolved and unresolved artworks as appropriate to intentions

ASSESSMENT AT A GLANCE		
Type of assessment	**Format of assessment**	**Grade percentage (%)**
External		60
Comparative study	› 10–15 screens which examine and compare at least 3 artworks, at least 2 of which need to be by different artists › A list of sources used. › HL only › 3–5 screens which analyse the extent to which the student's work and practices have been influenced by the art and artists examined	20
Process portfolio	› SL 9–18 and HL13–25 screens which evidence sustained experimentation, exploration, manipulation and refinement of a variety of art-making activities	40
Internal		40
Exhibition	› A curatorial rationale that does not exceed SL 400 and HL 700 words › SL 4–7 and HL 8–11 artworks › Exhibition text (stating the title, medium, size and intention) for each artwork	40

Group 6 – The Arts
Film*: Standard Level

I. Course description and aims

The IB Diploma Programme film course aims to develop students' skills so that they become adept in both interpreting and making film texts.

Through the study and analysis of film texts and exercises in film-making, the course explores film history, theory and socio-economic background. The course develops students' critical abilities, enabling them to appreciate the multiplicity of cultural and historical perspectives in film. To achieve an international understanding within the world of film, students are taught to consider film texts, theories and ideas from the points of view of different individuals, nations and cultures.

Students also develop the professional and technical skills (including organisational skills) needed to express themselves creatively in film. The course emphasises the importance of working individually and as a member of a group. A challenge for students following this course is to become aware of their own perspectives and biases and to learn to respect those of others. This requires willingness to attempt to understand alternative views, to respect and appreciate cultural diversity, and to have an open and critical mind.

In addition, the course is designed to promote:

› an appreciation and understanding of film as a complex art form
› an ability to formulate stories and ideas in film terms
› the practical and technical skills of production
› critical evaluation of film productions by the student and by others
› a knowledge of film-making traditions in more than one country.

II. Curriculum model overview

COMPONENTS	CLASS HOURS
Part 1: Textual analysis › Construction according to narrative or other formal organising principles › Representation of characters and issues › Camera angles, shots and movement › Editing and sequencing › Lighting, shade and colour › Sound › Location and set design › Features determining genre › Target audience › Historical, economic, sociocultural and institutional factors	37.5
Part 2: Film theory and history Aspects of film theory and history can be introduced to students by asking such questions as: › Who made this? › Why? › What can we tell about the film-maker(s)? › For whom was it made? How does it address its audience? What is the nature of our engagement with film? › What outside influences can we perceive in terms of finance, ownership, institution and sociocultural context? › What tradition is it in(for example, American gangster film, Bollywood musical)? › To what other works might it be connected?	75
Part 3: Creative process—techniques and organisation of production Initial planning › Finding the idea › Research › Treatment and script development Pitch › Developing the proposal › Negotiating the proposal with the teacher › Receiving approval to proceed Technical planning › Conceptualization › Visualization › Production scheduling › Editing and sound strategies Physical production › Pre-production Production › Post-production Production journal Retention of materials	75

III. Assessment model

Having followed the standard level film course, students are expected to demonstrate the following:

- An understanding of the variety of ways in which film creates meaning.
- An understanding and effective use of appropriate film language.
- Originality and creativity in developing an idea through the various stages of film-making, from conception to finished production.
- Technical skills and an appropriate use of available technology.
- The ability to draw together knowledge, skills, research and experience, and apply them analytically to evaluate film texts.
- A critical understanding of the historical, theoretical, sociocultural, economic and institutional contexts of film in more than one country.
- The ability to research, plan and organise working processes.
- The ability to reflect upon and evaluate film production processes and completed film texts.

ASSESSMENT AT A GLANCE

Type of assessment	Format of assessment	Grade percentage (%)
External		50
Independent study	Rationale, script and list of sources for a short documentary production of 8–10 pages on an aspect of film theory and/or film history, based on a study of a minimum of two films. The chosen films must originate from more than one country.	25
Presentation	An oral presentation of a detailed critical analysis of a continuous extract from a prescribed film. Maximum length of presentation: 10 minutes.	25
Internal		50
Exhibition	One completed film project with accompanying written documentation: no more than 1,200 words. Length of film project: 4–5 minutes.	50

11. Diploma Programme core

Theory of knowledge (TOK)

I. 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.

II. Curriculum model overview

COURSE ELEMENT	Teaching hours
Core theme: 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.	32
Optional themes Students are required to study two optional themes from the following five options › Knowledge and technology › Knowledge and language › Knowledge and politics › Knowledge and religion › Knowledge and indigenous societies	
Areas of knowledge Students are required to study the following five areas of knowledge › History › The human sciences › The natural sciences › The arts › Mathematics	50

III. 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 pf 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.			

IV. 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?

V. 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	Failing condition	Failing condition	Failing condition	Failing condition

Diploma Programme Core
Extended Essay (EE)

I. Course description and aims

The extended essay is a compulsory, externally assessed piece of independent research into a topic chosen by the student and presented as a formal piece of academic writing. The extended essay is intended to promote high-level research and writing skills, intellectual discovery and creativity while engaging students in personal research. This leads to a major piece of formally presented, structured writing of up to 4,000 words in which ideas and findings are communicated in a reasoned, coherent and appropriate manner. Students are guided through the process of research and writing by an assigned supervisor (a teacher in the school). All students undertake three mandatory reflection sessions with their supervisor, including a short interview, or viva voce, following the completion of the extended essay. Extended essay topics may be chosen from a list of approved DP subjects—normally one of the student's six chosen subjects for the IB diploma or the world studies option. World studies provides students with the opportunity to carry out an in-depth interdisciplinary study of an issue of contemporary global significance, using two IB disciplines.

The aims of the extended essay are to provide students with the opportunity to:
› engage in independent research with intellectual initiative and rigour
› develop research, thinking, self-management and communication skills
› reflect on what has been learned throughout the research and writing process.

II. Overview of the extended essay process

The extended essay process

The research process

1. Choose the approved DP subject.
2. Choose a topic.
3. Undertake some preparatory reading.
4. Formulate a well-focused research question.
5. Plan the research and writing process.
6. Plan a structure (outline headings) for the essay. This may change as the research develops.
7. Carry out the research.

Writing and formal presentation

The required elements of the final work to be submitted 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

As part of the supervision process, students undertake three mandatory reflection sessions with their supervisor. These sessions form part of the formal assessment of the extended essay and research process. The purpose of these sessions is to provide an opportunity for students to reflect on their engagement with the research process and is intended to help students consider the effectiveness of their choices,
re-examine their ideas and decide on whether changes are needed. The final reflection session is the viva voce. The viva voce is a short interview (10–15 minutes) between the student and the supervisor, and is a mandatory conclusion to the process.

The viva voce serves as:

› a check on plagiarism and malpractice in general
› an opportunity to reflect on successes and difficulties
› an opportunity to reflect on what has been learned
› an aid to the supervisor's report.

III. Assessment model

The extended essay, including the world studies option, is assessed against common criteria and is interpreted in ways appropriate to each subject.

Students are expected to:

› provide a logical and coherent rationale for their choice of topic
› review what has already been written about the topic
› formulate a clear research question
› offer a concrete description of the methods used to investigate the question
› generate reasoned interpretations and conclusions based on their reading and independent research in order to answer the question
› reflect on what has been learned throughout the research and writing process.

ASSESSMENT AT A GLANCE	
Assessment criteria	**Description**
Focus and method	The topic, the research question and the methodology are clearly stated
Knowledge and understanding	The research relates to the subject area/discipline used to explore the research question, and knowledge and understanding is demonstrated through the use of appropriate terminology and concepts.
Critical thinking	Critical-thinking skills have been used to analyse and evaluate the research undertaken.
Presentation	The presentation follows the standard format expected for academic writing.
Engagement	The student's engagement with their research focus and the research process.

The extended essay contributes to the student's overall score for the diploma 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.

IV. Sample extended essay topics

› What is the relationship between the length of an exhaust pipe and the frequency of the sound it emits?
› How far was the Christian Democrat victory in the Italian elections of 1948 influenced by Cold War tensions?
› How effective is Friedrich Dürrenmatt's use of colour to convey his message in the play Der Besuch der alten Dame?

Diploma Programme Core
Creativity, Activity, Service (CAS)

CAS is at the heart of the Diploma Programme. With its holistic approach, CAS is designed to strengthen and extend students' personal and interpersonal learning from the PYP and MYP.
CAS is organised 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

As a shining beacon of our values, CAS enables students to demonstrate attributes of the IB learner profile in real and practical ways, to grow as unique individuals and to recognise their role in relation to others. Students develop skills, attitudes and dispositions through a variety of individual and group experiences that provide students with opportunities to explore their interests and express their passions, personalities and

perspectives. CAS complements a challenging academic programme in a holistic way, providing opportunities for self-determination, collaboration, accomplishment and enjoyment.

CAS enables students to enhance their personal and interpersonal development. A meaningful CAS programme is a journey of discovery of self and others. For many, CAS is profound and life-changing. Each individual student has a different starting point and different needs and goals. A CAS programme is, therefore, individualized according to student interests, skills, values and background.

The school and students must give CAS as much importance as any other element of the Diploma Programme and ensure sufficient time is allocated for engagement in the CAS programme. The CAS stages offer a helpful and supportive framework and continuum of process for CAS students. Successful completion of CAS is a requirement for the award of the IB Diploma. While not formally assessed, students reflect on their CAS experiences and provide evidence in their CAS portfolios of achieving the seven learning outcomes.

The CAS programme formally begins at the start of the Diploma Programme and continues regularly, ideally on a weekly basis, for at least 18 months with a reasonable balance between creativity, activity, and service. 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 for student reflections; it is not formally assessed.

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. Students engage in CAS experiences involving one or more of the three CAS strands. A CAS experience can be a single event or may be an extended series of events.
Further, students undertake a CAS project of at least one month's duration that challenges students to show initiative, demonstrate perseverance, and develop skills such as collaboration, problem-solving, and decision-making. The CAS project can address any single strand of CAS, or combine two or all three strands. Students use the CAS stages (investigation, preparation, action, reflection and demonstration) as a framework for CAS experiences and the CAS project.

There are three formal documented interviews students must have with their CAS coordinator/adviser. The first interview is at the beginning of the CAS programme, the second at the end of the first year, and the third interview is at the end of the CAS programme. CAS emphasises reflection which is central to building a deep and rich experience in CAS. Reflection informs students' learning and growth by allowing students to explore ideas, skills, strengths, limitations and areas for further development and consider how they may use prior learning in new contexts.

Aims

The CAS programme 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.

Learning outcomes

Student completion of CAS is based on the achievement of the seven CAS learning outcomes realized through the student's commitment to his or her CAS programme over a period of 18 months. These learning outcomes articulate what a CAS student is able to do at some point during his or her CAS programme. Through meaningful and purposeful CAS experiences, students develop the necessary skills, attributes and understandings to achieve the seven CAS learning outcomes.
Some learning outcomes may be achieved many times, while others may be achieved less frequently. Not all CAS experiences lead to a CAS learning outcome. Students provide the school with evidence in their CAS portfolio of having achieved each learning outcome at least once through their CAS programme. The CAS coordinator must reach agreement with the student as to what evidence is necessary to demonstrate achievement of each CAS learning outcome. Commonly, the evidence of achieving the seven CAS learning outcomes is found in students' reflections.

The responsibility of the CAS student

Key to a student's CAS programme is personal engagement, choice and enjoyment of CAS experiences. Throughout the Diploma Programme students undertake a variety of CAS experiences, ideally on a weekly basis, for a minimum of 18 months. They must also undertake at least one CAS project with a minimum duration of one month. Students reflect on CAS experiences at significant moments throughout CAS and maintain a CAS portfolio. Using evidence from their CAS portfolio, students will demonstrate achievement of the seven CAS learning outcomes to the CAS coordinator's satisfaction.

CAS students are expected to:

- approach CAS with a proactive attitude
- develop a clear understanding of CAS expectations and the purpose of CAS
- explore personal values, attitudes and attributes with reference to the IB learner profile and the IB mission statement
- determine personal goals
- discuss plans for CAS experiences with the CAS coordinator and/or CAS adviser
- understand and apply the CAS stages where appropriate
- take part in a variety of experiences, some of which are self-initiated, and at least one CAS project
- become more aware of personal interests, skills and talents and observe how these evolve throughout the CAS programme
- maintain a CAS portfolio and keep records of CAS experiences including evidence of achievement of the seven CAS learning outcomes
- understand the reflection process and identify suitable opportunities to reflect on CAS experiences
- demonstrate accomplishments within their CAS programme
- communicate with the CAS coordinator/adviser and/or CAS supervisor in formal and informal meetings
- ensure a suitable balance between creativity, activity and service in their CAS programme
- behave appropriately and ethically in their choices and behaviours.

Please look for more information about:

H.I.S. Curriculum
› www.hischool.de

IB Programmes
› www.ibo.org

Life at H.I.S.
› www.his-makingadifference.com

Contact
Kevin Whitmore · H.I.S. Diploma Co-ordinator
kevin.whitmore@hischool.de

Heidelberg International School
Wieblinger Weg 7
69123 Heidelberg
Phone: +49 (0)6221 75 90 60-0
E-Mail: info@hischool.de