SOS Hermann Gmeiner International College

Handbook for the International Baccalaureate Diploma Programme

Class of 2023 Version

Senior Leadership Team
Principal: Mrs Eliz Dadson
Vice Principal: Mrs Adzo Ashie
Director of Studies: Mr Julian H Kitching
Senior House Tutor: Mr Michael Gyampo
Financial Controller: Mr Tongai Ndoro

Mail Address:	Private Mail Bag Community 6 Tema Ghana West Africa
Telephone:	+233 303 202907
Fax:	+233 303 202916
E-mail:	secretary_to_princip@soshgic.edu.gh

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SOS Hermann Gmeiner International College (SOS-HGIC)
A Very Brief Introduction

SOS Kinderdorf International (SOS-KDI) is a charitable, non-profit organization based in Austria which provides a home and education for abandoned, orphaned or destitute children in over 130 countries. SOS-HGIC is a co-educational residential school mainly for selected SOS students of 15 to 20 years old from all over Africa, established by SOS-KDI in 1990. The College is non-partisan, non-denominational and non-discriminatory. The College also admits non-SOS Ghanaians purely on academic merit. The school's philosophy embraces internationalism in its widest sense, pan-Africanism as defined by the commitment to uplift Africa, and active service to the community.

The International Baccalaureate Diploma Programme

The International Baccalaureate Diploma Programme is a rigorous pre-university course of studies, leading to examinations, that meets the needs of highly motivated secondary school students between the ages of 16 and 19. Designed as a comprehensive two-year curriculum that allows its graduates to fulfil requirements of various national education systems, the diploma model is based on the pattern of no single country but incorporates the best elements of many. The programme is available in English, French and Spanish.

The curriculum is displayed in the figure below, with six academic areas surrounding the **core** of Theory of Knowledge, CAS and the Extended Essay, with the whole structure founded upon the learner profile and infused with a spirit of international-mindedness. Diploma candidates are required to select one subject from each of the six subject groups. Usually, three subjects are studied at Higher Level (240 teaching hours each) and three at Standard Level (150 teaching hours each). By arranging work in this fashion, students are able to explore some subjects in depth and some more broadly over the two-year period; this is a deliberate compromise between the early specialisation preferred in some national systems and the breadth found in others.
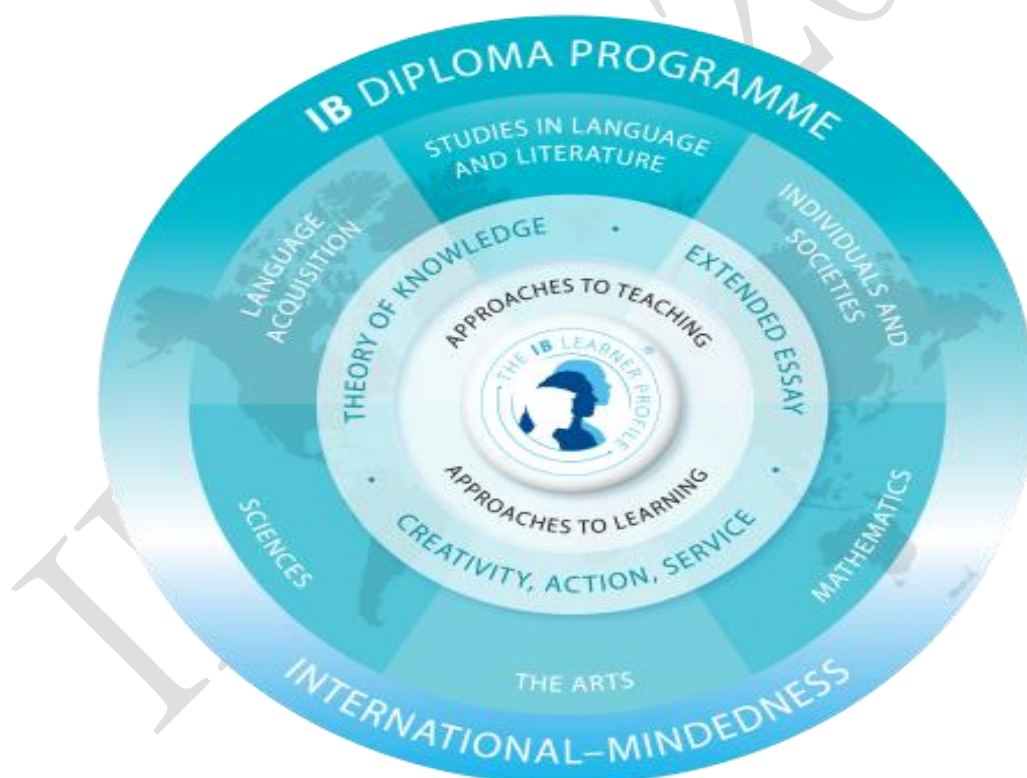
Successful candidates meet three other requirements in addition to the six subjects. The interdisciplinary Theory of Knowledge (TOK) course (100 hours) is designed to develop a coherent approach to learning which transcends and unifies the academic areas. The Extended Essay (EE) of some 4,000 words (40 hours) offers the opportunity to investigate a topic of special interest and acquaints students with the independent research and writing skills expected at university. Participation in the school's creativity, action, service (CAS) programme (150 hours) encourages students to be involved in sports, artistic pursuits and community service work.

A Short History of the IB Diploma Programme (DP)

The International Baccalaureate (IB) is a chartered foundation under the Swiss civil code with headquarters in Geneva. It is a private, non-governmental organization recognised by the Council of Europe and has consultative status with UNESCO (United Nations Educational, Scientific and Cultural Organization).

Founded in the 1960s, the IB grew out of international school efforts to establish a common curriculum and university entry credential for geographically mobile students. Beyond practical considerations, international educators were also motivated by an idealistic vision: they hoped that a shared academic experience emphasising critical thinking and exposure to a variety of viewpoints would foster tolerance and inter-cultural understanding among young people. Concentration on the last two years of secondary school sought to build a comprehensive curriculum – leading to a baccalaureate – that could be administered in any country and recognised by universities in every country.

Grants from the Twentieth Century Fund, the Ford Foundation and others supported programme development. Originally established in 1965 as the International Schools Examination Syndicate (ISES), the independent body took the name International Baccalaureate in 1967. Because of the balanced curriculum and high standards of assessment, the Diploma Programme has evolved from its original purpose as a service to the international community and now embraces authorised schools in national systems around the globe.

The IB Mission Statement

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

To this end the IB works with schools, governments and international organizations to develop challenging programmes of international education and rigorous assessment.

These programmes encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.

The IB Learner Profile

IB learners strive to be:

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

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

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

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

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

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

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

Risk-takers (courageous) 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.

Aims of the IB Learner Profile

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

The attributes and descriptors of the learner profile define the type of learner the IB hopes to develop through its programmes. These programmes promote the education of the whole person, emphasizing intellectual, personal, emotional and social growth through all domains of knowledge. By focusing on the dynamic combination of knowledge, skills, independent critical and creative thought and international-mindedness, the IB espouses the principle of educating the whole person for a life of active, responsible citizenship. Underlying the IB programmes is the concept of education of the whole person as a lifelong process. The learner profile is a profile of the whole person as a lifelong learner.

The learner profile is a central tenet of the IB programmes and central to the definition of what it means to be internationally minded. Thus, the IBO is placing the focus for schools where it belongs: on learning. It is not intended to be a profile of the perfect student; rather, it can be considered as a map of a lifelong journey in pursuit of international-mindedness. It places the learner firmly at the heart of IB programmes and focuses attention on the processes and the outcomes of learning.

It is the IB's intention that the learner profile will provide a clear and explicit statement of what is expected of students, teachers and school administrators in terms of learning, and what is expected of parents in terms of support for that learning.

IB Assessment

Each of the six IB subjects which contribute toward the individual candidate's IB diploma is assessed on the scale of 1 to 7. The word descriptions for each of these grades are as follows:

Each of the six IB subjects studied by the student counts for a maximum of 7, allowing a maximum total of 42. The Theory of Knowledge course and the Extended Essay carry an further 3 points – calculated using a matrix (see below) – bringing the maximum total to 45. Apart from various specific failing conditions (including very poor performance in either Theory of Knowledge or the Extended Essay), a candidate needs 24 points for the award of a diploma.

		Theory of Knowledge					
		A	**B**	**C**	**D**	**E**	**No submission**
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 submission	Failing condition	Failing condition	Failing condition	Failing condition	Failing condition	Failing condition

Examination Sessions

Final examinations for the IB diploma are offered twice a year – in May and November.

SOS-HGIC is a May session school.

The IB Diploma Programme (DP) at SOS-HGIC

The IB diploma programme at SOS-HGIC started in September 1993 with an initial cohort of 29 students, at which time it was the only IB diploma programme school in the entire West African region. Our first results were obtained in July 1995, and we have presented candidates in every May session since. Mean diploma aggregate scores are around 32-33. 70 of our students have achieved aggregates of 40 points or more out of the maximum of 45. To date, 1,480 students have offered the full diploma programme, with a pass rate of over 93%.

Most IB students at the College are continuing students from the IGCSE programme prior to IB, although some students may be admitted directly to IB.

For admissions to the IB diploma programme, contact in the first instance:
Julian H. Kitching, Director of Studies, SOS-HGIC.

We have had students following the IB programme from Burundi, Cameroon, China, Cote d'Ivoire, Ethiopia, Gambia, Ghana, India, Kenya, Lesotho, Liberia, Malawi, Mozambique, Namibia, New Zealand, Nigeria, Rwanda, Sierra Leone, Somalia, South Africa, Swaziland, Taiwan, Tanzania, Uganda, United Kingdom, United States, Zambia and Zimbabwe. There follows below a brief outline of the IB diploma programme at SOS-HGIC. More detailed treatment of all of the courses can be found further on in this document. Please refer also to the distribution requirements on page 19.

Group 1: Studies in Language and Literature
English A: literature and **English A: language and literature** courses are available. Also offered are **Amharic A: literature** for Ethiopians, **Swahili A: literature** for Tanzanians, and **French A: language and literature** for students from Francophone countries.

Group 2: Language Acquisition
French B and **Swahili B** (for East Africans) are available at Language B level. The College also offers **Swahili** and **Spanish** for beginners (*ab initio*), and **English B** for those who choose group 1 courses in languages other than English.

Group 3: Individuals and Societies
History, Geography, Economics, Social and Cultural Anthropology and **Information Technology in a Global Society** are the subjects available in this group.

Group 4: Sciences
Biology, Chemistry, **Physics** and **Computer Science** are available here.

Group 5: Mathematics
There are two **Mathematics** courses available, tailored to different interests and levels of ability.

Group 6: The Arts
We offer **Visual Arts, Theatre** and **Music** in this group.

Further details of levels offered, nature of the subject, course content, assessment methods and resources are given in the relevant sections below.

Current SOS-HGIC DP Teachers

Richard Awuku Aboagye	Mathematics, Theory of Knowledge
Enoch Acquah	Mathematics
Afua Addae-Sakyi	Anthropology, Theory of Knowledge
Ayeshat Addison	ITGS, Computer Science, (MYP Coordinator)
Edward Adiamah (HOD, Arts)	Visual Arts
William Adjei-Tuadzra	English A, English B
Peter Ahiable (DHOD Science)	Biology
Bright Ahiati	ITGS, Computer Science
Godwin Amedume	Economics
Neo Ankama Asamoah	Music
Charles Antwi	Mathematics
Herbert Asiedu-Mante	Biology
Gilbert Assou-Dodji	French A: language and literature, French B
Lawrence Badoe	Physics
Kwaku Boateng (HOD Science)	Chemistry
Joseph Botwe	Mathematics
Peter Boye	Chemistry
Mark Carter (HOD Mathematics)	Mathematics, Chemistry
Samuel Dawson Asaam	Theatre
Michael Djan	Biology
Michael Donkor	Chemistry, Physics
Enyonam Dzide	ITGS
James Essigyan	English A: literature
Vivian Essuman	Chemistry
Etornam Fianoo-Vidza	French B, Spanish *ab initio*
George Grandy-Hallow (HOD Humanities)	Geography, Theory of Knowledge
Christian Gogovi	English A, English B
Michael Gyampo	Chemistry, (Senior House Tutor)
Prosper Habada (HOD IT)	Computer Science, ITGS
Reindorf Hormeku-Adjei	Economics
John Kamau	History, Theory of Knowledge, EE Coordinator
Sahlu Kidane	Amharic A: literature, Theory of Knowledge
Julian Kitching	Director of Studies, Theory of Knowledge
Michael Kyei	Mathematics
Ami Sefako Kodjovi (DHOD Modern Languages)	Spanish *ab initio*, French B
Kodjo Komlagan	French A: language and literature, French B
Samuel Cleland	Swahili A literature, Swahili B, Swahili *ab initio*
Shadrack Mensah (HOD Mod. Languages)	Swahili A: literature, Swahili B, Swahili *ab initio*
Timothy Obuobi	Physics
Michael Oduro	CAS Coordinator, Theory of Knowledge
Richard Oppon Asante (DHOD Mathematics)	Mathematics
Solomon Sackitey	History, Theory of Knowledge

Deborah Sampson (HOD English)	English A
Isaac S-Darko	English A
Lauretta Shardow (DHOD IT)	Computer Science, ITGS
Clemence Tengey (DHOD English)	English A, Theory of Knowledge
Mark Tetteh	Economics
Malik Torbay	Theory of Knowledge
Enoch Yambilla (DHOD Humanities)	Geography

SOS-HGIC IB DP Submission Dates

Like all other IB schools, SOS-HGIC sets internal submission dates for various components of DP assessment. The purpose of these dates is to spread out the students' work in optimum fashion, while recognising that the students will mature intellectually during the two-year programme. The submission dates are also necessary so that teachers have time after them for assessment of the work, and so that clerical and administrative procedures can take place smoothly. A typical calendar of submission dates is outlined below:

DP1

November	First Examination Session
December - February	Group 4 Project (Science)
January - November	Extended Essay: a weekly Monday meeting space
April	Theory of Knowledge Mini-Presentations (Weekend)
May	Progress Report on Extended Essay Theory of Knowledge 1st Full-length Essay Theory of Knowledge: Exhibition CAS Year Review Second Examination Session

DP2

August	Theory of Knowledge 2nd Full-Length Essay Draft of Extended Essay
October – November	Theory of Knowledge Final Presentations
October	Final Draft of Extended Essay
November	Final Submission of Extended Essay Extended Essay *viva voce* with Supervisor Language A: literature Essay (HL) Third Examination Session
December	Mathematics Investigation
January	CAS Final Reflection Task Theory of Knowledge Final Essay History Investigation Geography Fieldwork

January (continued)	ITGS Projects
	Economics Portfolio
	Anthropology Observations/Fieldwork
	Science Individual Investigation
	Computer Science Solution
February	Group 1 Recorded Oral
March	Mock Examinations (Fourth Examination Session)
	Group 2 Recorded Oral
	Visual Arts Studio Work and Research Workbook
May	Final Examinations
July	Issue of Results

PLEASE NOTE:
The Director of Studies and the rest of the Senior Leadership Team of SOS-HGIC insist on rigorous adherence to these submission dates. Non-compliance may result in the removal of the student from the full Diploma programme. Under these circumstances, contact will immediately be sought with the SOS Village guardians or parents concerned.

The Diploma Core (TOK/EE/CAS)

The IB Diploma Programme requires students to engage in a course in Theory of Knowledge, undertake an Extended Essay, and participate in the school's creativity, action and service programmes, in addition to studying six subjects. As these three core components are some of the most distinctive and important features of the IB Diploma, they are discussed first.

Theory of Knowledge (TOK)

The Nature of the Subject

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. It is intended that through this holistic approach, discussions in one area will help to enrich and deepen discussions in other areas.

The course is an opportunity for teachers and students to engage in interesting conversations that cross the boundaries of individual disciplines and that help students to reflect on the knowledge they have acquired from both their academic studies and their lives outside the classroom. Students are encouraged to examine the evidence for claims and to consider, for example, how we distinguish fact from opinion, or how we evaluate the credibility of claims that we are exposed to in the media. They explore different methods and tools of inquiry and try to establish what it is about them that makes them effective, as well as considering their limitations.

It is easy to be bewildered by the sheer diversity of the knowledge on offer in the world. For example:

- In physics, experiment and observation seem to be the basis for knowledge. The physicist might want to construct a hypothesis to explain observations that do not fit current thinking and devises and performs experiments to test this hypothesis. Results are then collected and analysed and, if necessary, the hypothesis modified to accommodate them.

- In history there is no experimentation. Instead, documentary evidence provides the historian with the raw material for interpreting and understanding the recorded past of humanity. By studying these sources carefully a picture of a past event can be built up along with ideas about what factors might have caused it.

- In a literature class, students set about understanding and interpreting a text. No observation of the outside world is necessary, but there is a hope that the text can shed some light upon deep questions about what it is to be human in a variety of world situations or can act as a critique of the ways in which we organise our human societies.

- Economics, by contrast, considers the question of how societies allocate scarce resources. This is done by elaborating mathematical models based upon a mixture of reasoning and empirical observation of relevant economic factors.

- In the islands of Micronesia, a steersman successfully navigates between two islands 1600km apart without a map or a compass.

In each case above there is clearly knowledge at work, although the collection as a whole illustrates a wide variety of different types of knowledge. The task of TOK is to examine different areas of knowledge and find out what makes them different and what they have in common.

The TOK curriculum centres around the exploration of knowledge questions. Knowledge questions are crucial to effective TOK discussions as they help to make sure that students are focusing on questions about knowledge itself and about how we know things. Knowledge questions help students to move beyond subject-specific questions or specific real-life situations into the realm of TOK. Knowledge questions are questions about knowledge—about how knowledge is produced, acquired, shared and used; what it is and what it is not; who has it and who does not; and who decides the answers to these questions.

Instead of focusing on subject-specific content or specific examples, students focus on how knowledge is constructed and evaluated. In this sense, knowledge questions are distinct from many of the questions that students encounter in their other subjects. Knowledge questions are contestable in that there are a number of plausible answers to them. Dealing with these open contestable questions is a key feature of TOK, although some students can find the lack of a single "right" answer slightly disorienting. In TOK discussions, it is perfectly conceivable that answers to a question may differ—what matters is that the analysis is thorough, accurate and effectively supported by examples and evidence. Knowledge questions also draw on TOK concepts and terminology, rather than using subject-specific terminology or specific examples. Knowledge questions draw on central TOK concepts such as evidence, certainty, values, and interpretation.

While these questions could seem slightly intimidating in the abstract, they become much more accessible when dealt with in specific practical contexts within the TOK course. They arise naturally in the subject areas, the extended essay and CAS. The intention is that these contexts provide concrete examples of knowledge questions that should promote student discussion.

Knowledge questions underlie much of the knowledge that we take for granted and are often the motivation for many disagreements and controversies. Exploration of knowledge questions can therefore help us to have a deeper understanding of how knowledge is constructed and evaluated in different areas, as well as helping us to make sense of the world around us. Knowledge questions are the key tool for teaching and learning in TOK. The two assessment tasks—the TOK exhibition and TOK essay—centre on the exploration of knowledge questions as both the Internal Assessment (IA) prompts and the prescribed essay titles take the form of knowledge questions. It is therefore crucial that students engage with the exploration and discussion of knowledge questions throughout the TOK course.

TOK is a course in critical thinking but it is one that is specifically geared to an approach to knowledge that is mindful of the interconnectedness of the modern world. "Critical" in this

context implies an analytical approach prepared to test the support for knowledge claims, aware of its own weaknesses, conscious of its perspectives and open to alternative ways of answering knowledge questions. It is a demanding course but one that is an essential component not only of the Diploma Programme but of lifelong learning.

Course Organisation

The Theory of Knowledge (TOK) course at SOS-HGIC extends from August of DP1 until February of DP2. All TOK teachers are conversant with all parts of the course.

Course elements	Minimum 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
Assessment Students are required to complete **two** assessment tasks. • TOK exhibition (internally assessed) • TOK essay on a prescribed title (externally assessed)	18
Total minimum teaching hours	**100**

Participation
Students are expected to take an active role in the TOK course and to keep notes assiduously. Participation in an online blog is sometimes part of the school-based assessment.

Assessment

Internal Assessment   33%

An individual exhibition.

External Assessment   67%

An essay (1,600 words) on one of 6 titles prescribed by the IB.

Students are assessed on participation, exhibitions, essays and set homework tasks.

The final grade for Theory of Knowledge is combined with the grade for the Extended Essay, and contributes up to three points to the total score for the IB Diploma. A student must achieve a D grade or higher in TOK to be awarded the Diploma.

The final grade awarded in Theory of Knowledge is on the following scale:

GRADE	WORD DESCRIPTION
A	Excellent
B	Good
C	Satisfactory
D	Mediocre
E	Elementary

For queries specifically concerned with the Theory of Knowledge programme, contact:
Mr. Julian H. Kitching, Director of Studies, TOK Programme Co-ordinator, SOS-HGIC.

The Extended Essay (EE)

Nature

The extended essay is an in-depth study of a focused topic chosen from the list of available Diploma Programme subjects for the session in question. This is normally one of the student's six chosen subjects for those taking the IB diploma, or a subject that a course student has a background in. It is intended to promote academic research and writing skills, providing students with an opportunity to engage in personal research in a topic of their own choice, under the guidance of a supervisor (an appropriately qualified member of staff within the school). This leads to a major piece of formally presented, structured writing, in which ideas and findings are communicated in a reasoned and coherent manner, appropriate to the subject chosen. It is mandatory that all students undertake three reflection sessions with their supervisor, which includes a short, concluding interview, or *viva voce*, with their supervisor following the completion of the extended essay.

The extended essay is assessed against common criteria, interpreted in ways appropriate to each subject.

Key features of the extended essay

- The extended essay is compulsory for all students taking the Diploma Programme and is an option for course students.
- A student must achieve a D grade or higher to be awarded the Diploma.
- The extended essay is externally assessed and, in combination with the grade for theory of knowledge, contributes up to three points to the total score for the IB Diploma.
- The extended essay process helps prepare students for success at university and in other pathways beyond the Diploma Programme.
- When choosing a subject for the extended essay, students must consult the list of available Diploma Programme subjects published in the Handbook of procedures for the Diploma Programme for the session in question.
- The extended essay is a piece of independent research on a topic chosen by the student in consultation with a supervisor in the school.
- It is presented as a formal piece of sustained academic writing containing no more than 4,000 words accompanied by a reflection form of no more than 500 words.
- It is the result of approximately 40 hours of work by the student.
- Students are supported by a supervision process recommended to be 3–5 hours, which includes three mandatory reflection sessions.
- The third and final mandatory reflection session is the *viva voce*, which is a concluding interview with the supervising teacher.

The nature of the extended essay

- The extended essay is a unique opportunity for students to explore an academic area in which they have a personal interest. This takes the form of an independently written research paper that allows students to demonstrate their passion, enthusiasm, intellectual initiative and/or creative approach for their chosen topic. Emphasis is placed on engagement and reflection on the research process, highlighting the journey the student has made on an intellectual and personal level and how it has changed them as a learner and affected the final essay.

- Students complete an extended essay in a specific discipline in which they must demonstrate their knowledge and understanding of the theories, tools and techniques of that discipline explored through a topic of their choice.
- An important aim of the extended essay, as part of the Diploma Programme core is to support and be supported by the academic disciplines. Whichever subject is chosen, the extended essay is concerned with exploring a specific research question through interpreting and evaluating evidence, and constructing reasoned arguments. In undertaking the extended essay students model many of the elements of academic research by locating their topic within a broader disciplinary context, justifying the relevance of their research and critically evaluating the overall strength of the arguments made and sources used. Guided through this process by a supervisor, students are encouraged to reflect on insights gained, evaluate decisions, and respond to challenges encountered during the research.
- While research skills are fundamental to successful completion, other skills are implicit in the task. As the extended essay is an independent task, it requires students to self-manage by developing organization and affective skills, including mindfulness, perseverance, resilience and self-motivation. The process of researching and writing the extended essay represents the learner profile in action. Being open-minded, principled and reflective are aspects of the student experience within the extended essay. The extended essay provides students with the opportunity to become more internationally minded by engaging with the local and global communities on topics of personal inquiry. The development of the learner profile attributes help to unify IB learners in a larger community in this shared experience.
- The extended essay is a challenging and rewarding experience, which prepares students for different pathways beyond the Diploma Programme by developing skills valued by both tertiary education and employers. The extended essay embodies the essence of an IB education in developing inquiring, critical, lifelong learners.

Supervision

Each student writing an Extended Essay has a supervisor. The supervisor's role is to help with the selection of the topic and provide a guiding influence in the background throughout the period of work. The Extended Essay has a scheduled slot in our calendar during which meetings and seminars for various purposes take place.

Assessment

An external examiner assesses the Extended Essay. The final grade awarded is based on the same scale as that used for TOK, as below:

GRADE	WORD DESCRIPTION
A	Excellent
B	Good
C	Satisfactory
D	Mediocre
E	Elementary

For queries specifically concerned with Extended Essays, contact:
Mr. John Kamau, Extended Essay Coordinator, SOS-HGIC.

Creativity, Activity, Service (CAS)

Creativity, Activity, Service (CAS) is at the heart of the Diploma Programme. It is one of the three essential elements in every student's Diploma Programme experience. It involves students in a range of activities that complements their academic studies throughout the Diploma Programme. The three strands of CAS, which are often interwoven with particular activities, are characterized 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.

With its holistic approach, CAS enables students to demonstrate attributes of the IB learner profile in real and practical ways, to grow as unique individuals and to recognize their role in relation to others. Students develop skills, attitudes and dispositions through a variety of individual and group experiences that provide them 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.

The CAS programme formally begins at the start of the Diploma Programme and continues regularly (on a weekly basis) for at least 18 months with a reasonable balance between creativity, activity, and service. Typically, a student's CAS programme combines planned/unplanned singular and on-going experiences, all of which are valuable and may lead to personal development. A series of planned CAS experiences are recommended for a more engaging CAS programme. 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.

An experience must go through five stages to be considered as CAS. These stages offer a helpful and supportive framework and continuum of process for CAS students as they consider what they would like to do in CAS, make plans, and carry out their ideas. The CAS stages are applicable to the three strands of creativity, activity, service, and the CAS project, and represent a process and sequence that can assist students in many aspects of their life. The five CAS stages are investigation, preparation, action, reflection and demonstration.

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. 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.

For queries specifically concerned with the CAS programme, contact:
Mr. Michael Oduro, CAS Coordinator, SOS-HGIC.

The Six Subjects

In addition to the core, the IB Diploma student must study six subjects – normally three at Higher Level and three at Standard Level. These subjects must be chosen from the groups elaborated below, such that one subject is chosen from each of groups 1 to 5, and the sixth subject comes from Group 6, or as another from either Group 3 or Group 4. Timetable constraints at SOS-HGIC, as at any other school, prohibit certain, otherwise legitimate, subject combinations.

GROUP 1

Studies in Language and Literature in the Diploma Programme

The two courses offered in this group are designed for students from a wide variety of linguistic and cultural backgrounds who have experience of using the language of the course in an educational context. The focus of the study developed in each course varies depending on the subject's individual characteristics.

The language profile of students taking these courses will vary, but their receptive, productive and interactive skills should be strong and the expectation is that the course will consolidate them further. Students are expected to develop their proficiency, fluency and linguistic range, and in particular to acquire the vocabulary appropriate to the analysis of texts. They will also deepen their understanding of a wide variety of concepts explored through literary and non-literary texts in order to interpret, analyse, evaluate and then communicate this understanding in clear, organized and developed products.

Each course each has its own identity and is designed to support future academic study or career-related paths by developing social, aesthetic and cultural literacy, as well as improving language competence and communication skills. For each course, the syllabus and assessment requirements are identical for all languages offered. The teaching and assessment of any particular studies in language and literature course will be conducted in that language.

Each course explores elements of language, literature and performance and focus on:
- the relationships between readers, writers and texts
- the range and functions of texts across geographical space and historical time
- aspects of intertextuality.

Studies in language and literature model
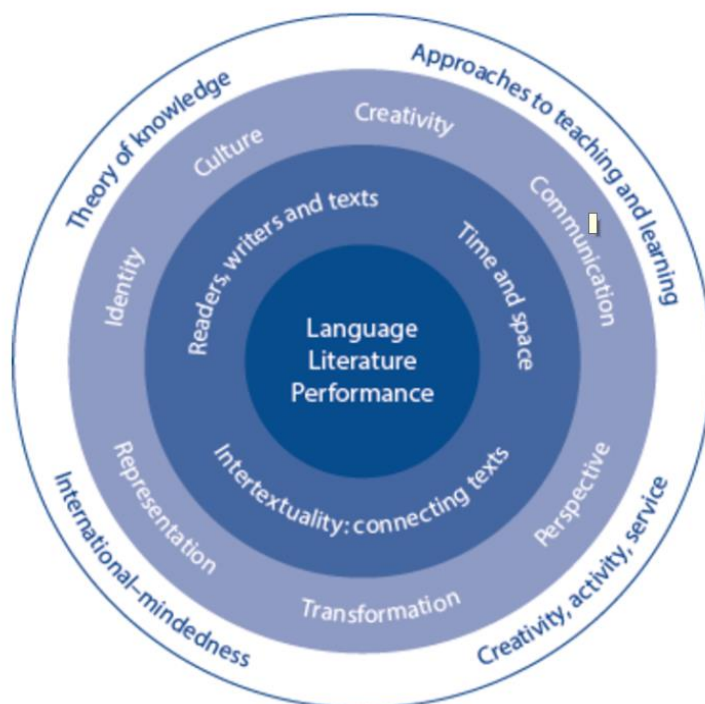
Key Concepts in Group 1: identity, culture, creativity, communication, perspective, transformation, representation

Language A: literature

What students will learn in the language A: literature course

In the language A: literature course, students will learn about the various manifestations of literature as a powerful mode of writing across cultures and throughout history. They will explore and develop an understanding of factors that contribute to the production and reception of literature, such as:

• the creativity of writers and readers
• the nature of the interaction with the writers' and readers' respective contexts and with literary tradition
• the ways in which language can give rise to meaning and/or effect
• the performative and transformative potential of literary creation and response.

Through close analysis of literary texts in a number of forms and from different times and places, students will consider their own interpretations, as well as the critical perspectives of others. In turn, this will encourage the exploration of how viewpoints are shaped by cultural belief systems and how meanings are negotiated within them. Students will be involved in processes of critical response and creative production, which will help shape their awareness of how texts work to influence the reader and how readers open up the possibilities of texts. With its focus on literature, this course is particularly concerned with developing sensitivity to aesthetic uses of language and empowering students to consider the ways in which literature represents and constructs the world and social and cultural identities.

Syllabus component	Teaching hours	
	SL	HL
Readers, writers and texts Works are chosen from a variety of literary forms. The study of the works could focus on the relationships between literary texts, readers and writers as well as the nature of literature and its study. This study includes the investigation of the response of readers and the ways in which literary texts generate meaning. The focus is on the development of personal and critical responses to the particulars of literary texts.	50	80
Time and space Works are chosen to reflect a range of historical and/or cultural perspectives. Their study focuses on the contexts of literary texts and the variety of ways literary texts might both reflect and shape society at large. The focus is on the consideration of personal and cultural perspectives, the development of broader perspectives, and an awareness of the ways in which context is tied to meaning.	50	80
Intertextuality: Connecting texts Works are chosen so as to provide students with an opportunity to extend their study and make fruitful comparisons. Their study focuses on intertextual relationships between literary texts with possibilities to explore various topics, thematic concerns, generic conventions, literary forms or literary traditions that have been introduced throughout the course. The focus is on the development of critical response grounded in an understanding of the complex relationships among literary texts.	50	80
Total teaching hours	150	240

Works read	SL	HL
Works in translation written by authors on the *Prescribed reading list*	Study of a minimum of three works	Study of a minimum of four works
Works originally written in the language studied, by authors on the *Prescribed reading list*	Study of a minimum of four works	Study of a minimum of five works
Free choice works	Study of two works freely chosen	Study of four works freely chosen
Total works studied	9	13
External assessment	**SL**	**HL**
Paper 1: Guided literary analysis	A guided analysis of a previously unseen literary extract or text from a choice of two	Two guided analyses of previously unseen literary extracts or texts
HL essay		An essay of 1,200–1,500 words exploring a line of inquiry in connection with a studied literary text or work

Language A: language and literature

What students will learn in the language A: language and literature course
In the language A: language and literature course students will learn about the complex and dynamic nature of language and explore both its practical and aesthetic dimensions. They will

explore the crucial role language plays in communication, reflecting experience and shaping the world. Students will also learn about their own roles as producers of language and develop their productive skills. Throughout the course, students will explore the various ways in which language choices, text types, literary forms and contextual elements all effect meaning.

Through close analysis of various text types and literary forms, students will consider their own interpretations, as well as the critical perspectives of others, to explore how such positions are shaped by cultural belief systems and to negotiate meanings for texts. Students will engage in activities that involve them in the process of production and help shape their critical awareness of how texts and their associated visual and audio elements work together to influence the audience/reader and how audiences/readers open up the possibilities of texts. With its focus on a wide variety of communicative acts, the course is meant to develop sensitivity to the foundational nature, and pervasive influence, of language in the world at large.

Syllabus component	Teaching hours*	
	SL	HL
Readers, writers and texts Non-literary texts are chosen from a variety of sources and media to represent as wide a range of text types as possible, and works are chosen from a variety of literary forms. The study of the non-literary texts and works focuses on the nature of language and communication and the nature of literature and its study. This study includes the investigation of how texts themselves operate as well as the contexts and complexities of production and reception. Focus is on the development of personal and critical responses to the particulars of communication.	50	80
Time and space Non-literary texts and literary works are chosen from a variety of sources, literary forms and media that reflect a range of historical and/or cultural perspectives. Their study focuses on the contexts of language use and the variety of ways literary and non-literary texts might both reflect and shape society at large. The focus is on the consideration of personal and cultural perspectives, the development of broader perspectives, and an awareness of the ways in which context is tied to meaning.	50	80
Intertextuality: connecting texts Non-literary texts and literary works are chosen from a variety of sources, literary forms and media in a way that allows students an opportunity to extend their study and make fruitful comparisons. Their study focuses on intertextual relationships with possibilities to explore various topics, thematic concerns, generic conventions, modes or literary traditions that have been introduced throughout the course. The focus is on the development of critical response grounded in an understanding of the complex relationships among texts.	50	80
Total teaching hours	150	240

Works read	SL	HL
Works in translation written by authors on the *Prescribed reading list*	Study of a minimum of one work	Study of a minimum of two works
Works originally written in the language studied, by authors on the *Prescribed reading list*	Study of a minimum of one work	Study of a minimum of two works
Free choice works	Study of two works freely chosen	Study of two works freely chosen
Total works studied	4	6
External assessment	**SL**	**HL**
Paper 1: Guided textual analysis	A guided analysis of a previously unseen non-literary extract or text from a choice of two	Two guided analyses of previously unseen non-literary extracts or texts
HL essay		A 1200-1500 word essay exploring a line of inquiry in connection with a studied text or work

Language A: Literature - Higher Level and Standard Level

HL Assessment

Assessment component	Weighting
External assessment (4 hours)	**80%**
Paper 1: Guided literary analysis (2 hours 15 minutes)	**35%**
The paper consists of two literary passages, from two different literary forms, each accompanied by a question. Students write an analysis of each of the passages. (40 marks)	
Paper 2 Comparative essay (1 hour 45 minutes)	**25%**
The paper consists of four general questions. In response to one question, students write a comparative essay based on two works studied in the course. (30 marks)	
Higher level (HL) essay	**20%**
Students submit an essay on one literary text or work studied during the course. (20 marks)	
The essay must be 1,200–1,500 words in length.	
Internal assessment	**20%**
This component consists of an individual oral that is internally assessed by the teacher and externally moderated by the IB at the end of the course.	
Individual oral (15 minutes)	
Supported by an extract from one work written originally in the language studied and one from a work studied in translation, students will offer a prepared response of 10 minutes, followed by 5 minutes of questions by the teacher, to the following prompt:	
Examine the ways in which the global issue of your choice is presented through the content and form of two of the works that you have studied. (40 marks)	

SL Assessment

Assessment component	Weighting
External assessment (3 hours)	70%
Paper 1: Guided literary analysis (1 hour 15 minutes)	35%
The paper consists of two passages from two different literary forms, each accompanied by a question. Students choose one passage and write an analysis of it. (20 marks)	
Paper 2 Comparative essay (1 hour 45 minutes)	35%
The paper consists of four general questions. In response to one question, students write a comparative essay based on two works studied in the course. (30 marks)	
Internal assessment	30%
This component consists of an individual oral that is internally assessed by the teacher and externally moderated by the IB at the end of the course.	
Individual oral (15 minutes)	
Supported by an extract from one work written originally in the language studied and one from a work studied in translation, students will offer a prepared response of 10 minutes, followed by 5 minutes of questions by the teacher, to the following prompt:	
Examine the ways in which the global issue of your choice is presented through the content and form of two of the works that you have studied. (40 marks)	

Language A: Language and Literature - Higher Level and Standard Level

HL Assessment

Assessment component	Weighting
External assessment (4 hours)	80%
Paper 1: Guided textual analysis (2 hours 15 minutes)	35%
The paper consists of two non-literary passages, from two different text types, each accompanied by a question. Students write an analysis of each of the passages. (40 marks)	
Paper 2: Comparative essay (1 hour 45 minutes)	25%
The paper consists of four general questions. In response to one question students write a comparative essay based on two works studied in the course. (30 marks)	20%
HL essay	
Students submit an essay on one non-literary text or a collection of non-literary texts by one same author, or a literary text or work studied during the course. (20 marks)	
The essay must be 1,200-1,500 words in length.	
Internal assessment: Individual oral (15 minutes)	20%
This component consists of an individual oral which is internally assessed by the teacher and externally moderated by the IB at the end of the course.	
Individual oral (15 minutes)	
Supported by an extract from both one non-literary text and one from a literary work, students will offer a prepared response of 10 minutes, followed by 5 minutes of questions by the teacher, to the following prompt:	
Examine the ways in which the global issue of your choice is presented through the content and form of two of the works that you have studied. (40 marks)	

SL Assessment

Assessment component	Weighting
External assessment (3 hours)	**70%**
Paper 1: Guided textual analysis (1 hour 15 minutes)	**35%**
The paper consists of two non-literary passages, from two different text types, each accompanied by a question. Students choose one passage and write an analysis of it. (20 marks)	
Paper 2: Comparative essay (1 hour 45 minutes)	**35%**
The paper consists of four general questions. In response to one question students write a comparative essay based on two works studied in the course. (30 marks)	
Internal assessment	**30%**
This component consists of an individual oral which is internally assessed by the teacher and externally moderated by the IB at the end of the course.	
Individual oral (15 minutes)	
Supported by an extract from one non-literary text and one from a literary work, students will offer a prepared response of 10 minutes, followed by 5 minutes of questions by the teacher, to the following prompt:	
Examine the ways in which the global issue of your choice is presented through the content and form of two of the texts that you have studied. (40 marks)	

For queries specifically concerned with the Language A: Literature and Language A: Language and Literature programmes, contact:
Mrs. Deborah Sampson, Head of English Department, SOS-HGIC.
Mr. Shadrack Mensah, Head of Modern Languages Department, SOS-HGIC.

GROUP 2

English B Higher and Standard Level
French B Higher Level and Standard Level
Swahili B Higher Level and Standard Level, and *ab initio SL*
Spanish *ab initio SL*

Nature of the Subjects
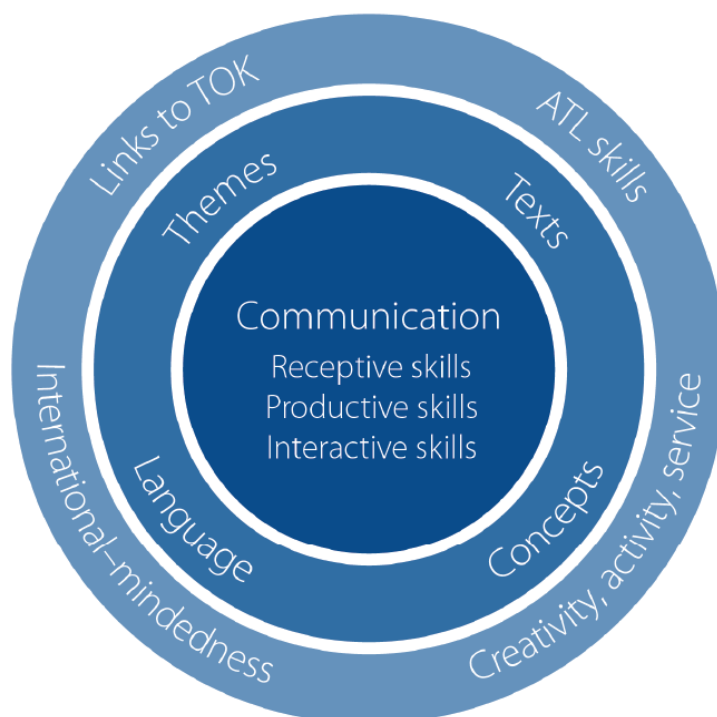
Language ab initio and language B are language acquisition courses designed to provide students with the necessary skills and intercultural understanding to enable them to communicate successfully in an environment where the language studied is spoken. This process allows the learner to go beyond the confines of the classroom, expanding their awareness of the world and fostering respect for cultural diversity. The two modern language courses develop students' linguistic abilities through the development of receptive, productive and interactive skills.

Language B is a language acquisition course designed for students with some previous experience of the target language. In the language B course, students further develop their 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, as appropriate to the level of the course. Language *ab initio* is a language acquisition course designed for students with no prior experience of the target language, or for those students with very limited previous exposure. It should be noted that language *ab initio* is offered at SL only.

The languages that are offered as Language B subjects at SOS-HGIC are English, French and Swahili. French B is the most commonly studied, while English B is available only for students with a limited background in English. Swahili B has been offered for East Africans familiar with the language. Swahili and Spanish *ab initio* are courses for complete beginners and are therefore available for students with no previous exposure to the language.

Language B

In the language B course, students develop the ability to communicate in the target language through the study of **language**, **themes** and **texts**. In doing so, they also develop **conceptual understandings** of how language works. Communication is evidenced through receptive, productive and interactive skills across a range of contexts and purposes that are appropriate to the level of the course.

The study of language requires careful attention to forms, structures, functions and conceptual understandings of language. Knowledge of vocabulary and grammar—the *what* of language—is reinforced and extended by understanding the *why* and *how* of language: audience, context, purpose, meaning. Students expand the range of their communication skills by understanding and producing a wide variety of oral and written texts for audiences, contexts and purposes associated with academic and personal interests.

For the development of receptive skills, language B students must study authentic texts that explore the culture(s) of the target language. In addition, the study of two literary works originally written in the target language is required at HL.

Themes and Topics

Five prescribed themes are common to the syllabuses of language B and language ab initio; the themes provide relevant contexts for study at all levels of language acquisition in the DP, and opportunities for students to communicate about matters of personal, local or national, and global interest. The themes allow students to compare the target language and culture(s) to other languages and cultures with which they are familiar.

The five prescribed themes must all be addressed equally in the language B course; beyond that, teachers are free to work with the themes in a way that best helps them to organize a course plan and build upon students' interests in the target language and its cultures, and that best helps students to meet the expectations of the syllabus with regard to language and texts. The following shows recommended topics for each theme that are appropriate for students to achieve the aims and objectives of the course. The recommended topics are to be considered *indicative content*, not prescribed content, for the language B course. The themes are prescribed, but the recommended topics and possible questions for each theme are not prescribed.

THEMES	TOPICS
Identities	• Lifestyles
	• Health and wellbeing
	• Beliefs and values
	• Subcultures
	• Language and identity
Experiences	• Leisure activities
	• Holidays and travel

	• Life stories
	• Rites of passage
	• Customs and traditions
	• Migration
Human Ingenuity	• Entertainment
	• Artistic expressions
	• Communication and media
	• Technology
	• Scientific innovation
Social Organisation	• **Social relationships**
	• Community
	• Social engagement
	• Education
	• The working world
	• Law and order
Sharing the Planet	• The environment
	• Human rights
	• Peace and conflict
	• Equality
	• Globalization
	• Ethics
	• Urban and rural environment

Texts
In theory, a text is anything from which information can be extracted, including the wide range of oral, written and visual materials present in society. For example:
• single and multiple images, with or without written text
• non-literary and literary written texts and extracts
• broadcast media texts: films, radio and television programmes, and their scripts
• oral texts: presentations, debates, interviews, speeches, recorded conversations, and their transcripts
• electronic texts that share aspects of the above areas: text messaging, web pages and blogs, social media and video-sharing websites.

For the purposes of teaching and learning in a language acquisition course, the language B syllabus organizes written, visual, audio and audio-visual texts into three broad categories: **personal**, **professional** and **mass media texts**. The guiding principle for using texts in the DP language acquisition courses is to develop students' receptive, productive and interactive skills in the target language by focusing their attention on the ways in which good communicators consider the audience, context and purpose of what they want to say or write in the process of choosing and developing an appropriate text type to convey a message.
Teachers provide frequent opportunities for students to understand and use a variety of text types in relation to the prescribed themes and related course content.

HL Assessment

Internal Assessment   **25%**

Individual oral assessment   *25%*
A conversation with the teacher, based on a visual stimulus, followed by discussion
based on an additional theme.

External Assessment   **75%**

Paper 1: Productive skills   *1 hour 30 minutes*   *25%*
One writing task of 450–600 words from a choice of three, each from a different theme,
choosing a text type from among those listed in the examination instructions.

Paper 2: Receptive skills   *2 hours*   *50%*
Separate sections for listening and reading
Listening comprehension (1 hour)
Reading comprehension (1 hour)
Comprehension exercises on three audio passages and three written texts, drawn from all five
themes.

SL Assessment

Internal Assessment   **25%**

Individual oral assessment   *25%*
A conversation with the teacher, based on a visual stimulus, followed by discussion
based on an additional theme.

External Assessment   **75%**

Paper 1: Productive skills   *1 hour 15 minutes*   *25%*
One writing task of 250–400 words from a choice of three, each from a different theme,
choosing a text type from among those listed in the examination instructions.

Paper 2: Receptive skills   *1 hour 45 minutes*   *50%*
Separate sections for listening and reading
Listening comprehension (45 minutes)
Reading comprehension (1 hour)
Comprehension exercises on three audio passages and three written texts, drawn from all five
themes.

Language *ab initio*

In the language ab initio course, students develop the ability to communicate in the target
language through the study of **language**, **themes** and **texts**. In doing so, they also develop
conceptual understandings of how language works. Communication is evidenced through
receptive, productive and interactive skills across a range of contexts and purposes that are
appropriate to the level of the course.
The study of language requires careful attention to forms, structures, functions and conceptual
understandings of language. Knowledge of vocabulary and grammar—the *what* of language—is
reinforced and extended by understanding the *why* and *how* of language: audience, context,
purpose, meaning. Students expand the range of their communication skills by understanding
and producing a wide variety of oral and written texts for audiences, contexts and purposes
associated with academic and personal interests. For the development of receptive skills,

language ab initio students must study authentic texts that explore the culture(s) of the target language.

Themes and Topics
Five prescribed themes are common to the syllabuses of language *ab initio* and language B; the themes provide relevant contexts for study at all levels of language acquisition in the DP, and opportunities for students to communicate about matters of personal, local or national, and global interest. The themes allow students to compare the target language and culture(s) to other languages and cultures with which they are familiar.

Because a structured learning environment is crucial for the success of beginning language learners, the language *ab initio* syllabus prescribes four topics for each of the five prescribed themes. Thus, in total there are 20 topics that must be addressed in the language *ab initio* course. Although the themes and topics are prescribed, the possible questions are suggestions linked to the themes and are not prescribed.

THEMES	TOPICS
Identities	• Personal attributes
	• Personal relationships
	• Eating and drinking
	• Physical wellbeing
Experiences	• Daily routine
	• Leisure
	• Holidays
	• Festivals and celebrations
Human Ingenuity	• Transport
	• Entertainment
	• Media
	• Technology
Social Organisation	• Neighbourhood
	• Education
	• The workplace
	• Social issues
Sharing the Planet	• Climate
	• Physical geography
	• The environment
	• Global issues

Texts
In theory, a text is anything from which information can be extracted, including the wide range of oral, written and visual materials present in society. For example:
• single and multiple images, with or without written text
• non-literary and literary written texts and extracts
• broadcast media texts: films, radio and television programmes, and their scripts
• oral texts: presentations, debates, interviews, speeches, recorded conversations, and their transcripts
• electronic texts that share aspects of the above areas: text messaging, web pages and blogs, social media and video-sharing websites.

For the purposes of teaching and learning in a language acquisition course, the language *ab initio* syllabus organizes written, visual, audio and audio-visual texts into three broad categories: **personal**, **professional** and **mass media texts**. The guiding principle for using texts in the DP language acquisition courses is to develop students' receptive, productive and interactive skills in the target language by focusing their attention on the ways in which good communicators consider the audience, context and purpose of what they want to say or write in the process of choosing and developing an appropriate text type to convey a message.

Teachers provide frequent opportunities for students to understand and use a variety of text types in relation to the prescribed themes and related course content.

Assessment

Internal Assessment   25%

Interactive skills: Individual oral assessment   *25%*
A conversation with the teacher, based on a visual stimulus and at least one additional course theme.

External Assessment   75%

Paper 1: Productive skills   *1 hour*   *25%*
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.

Paper 2: Receptive skills   *1 hour 45 minutes*   *50%*
Separate sections for listening and reading
Listening comprehension (45 minutes)
Reading comprehension (1 hour)
Comprehension exercises on three audio passages and three written texts, drawn from all five themes.

For queries specifically concerned with the Language B and *ab initio* programmes, contact:
Mr. Shadrack Mensah, Head of Modern Languages Department, SOS-HGIC.
Mr. Christian Gogovi, Head of English Department, SOS-HGIC.

GROUP 3

Economics Higher Level and Standard Level

Nature of the Subject

Economics is an exciting, dynamic subject that allows students to develop an understanding of the complexities and interdependence of economic activities in a rapidly changing world. At the heart of economic theory is the problem of scarcity. While the world's population has unlimited needs and wants, there are limited resources to satisfy these needs and wants. As a result of this scarcity, choices have to be made. The economics course, at both SL and HL, uses economic theories to examine the ways in which these choices are made at the level of producers and consumers in individual markets (microeconomics), at the level of the government and the national economy (macroeconomics), and at an international level where countries are becoming increasingly interdependent through international trade and the movement of labour and capital (the global economy). The choices made by economic agents (consumers, producers and governments) generate positive and negative outcomes and these outcomes affect the relative well-being of individuals and societies.

As a social science, economics examines these choices through the use of models and theories. The course allows students to explore these models and theories, and apply them, using empirical data, through the examination of the following six real-world issues which are posed as economic questions:
• How do consumers and producers make choices in trying to meet their economic objectives?
• When are markets unable to satisfy important economic objectives—and does government intervention help?
• Why does economic activity vary over time and why does this matter?
• How do governments manage their economy and how effective are their policies?
• Who are the winners and losers of the integration of the world's economies?
• Why is economic development uneven?

Key Concepts in Economics: scarcity, choice, efficiency, equity, economic well-being, sustainability, change, interdependence, intervention

The three components of inquiries are of equal relevance and teachers may choose any one as a starting point for their teaching. **Concepts** are anchored in the **content** of economics—its theories, models, ideas and tools—and are given **context** through the study of real-world issues and examples. Together these components help students to acquire a holistic and integrated understanding of economics as a discipline.

The relationship between inquiries, concepts, content and contexts in economics
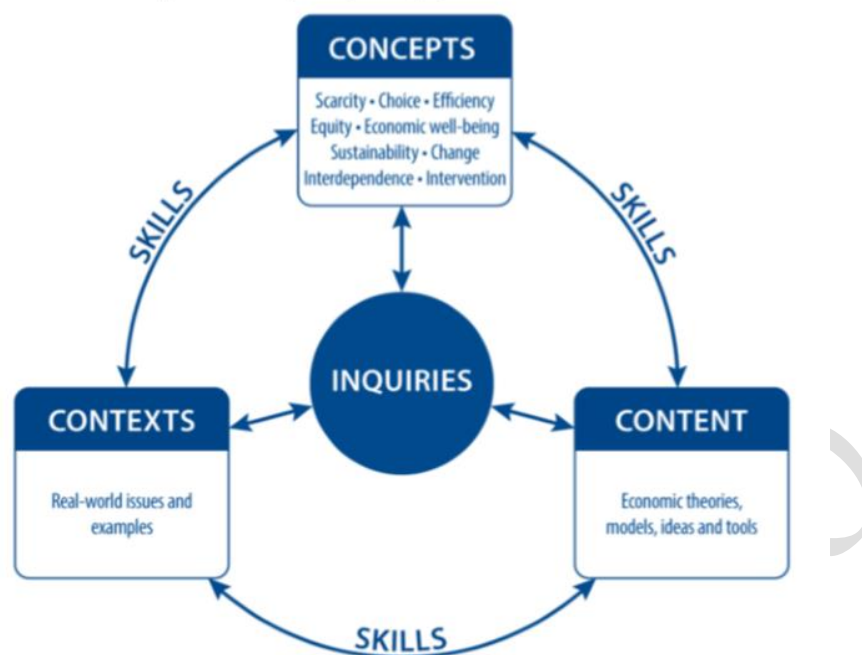
Course Content

The Higher Level and Standard Level courses cover the same core syllabus but Higher Level students are given extension work in each section.

- **Unit 1**: Introduction to economics: What is economics?; How do economists approach the world?
- **Unit 2**: Microeconomics: Demand; Supply; Competitive market equilibrium; Critique of the maximizing behaviour of consumers and producers; Elasticity of demand; Elasticity of supply; Role of government in microeconomics; Market failure—externalities and common pool or common access resources; Market failure—public goods; Market failure—asymmetric information; Market failure—market power; The market's inability to achieve equity
- **Unit 3**: Macroeconomics: Measuring economic activity and illustrating its variations; Variations in economic activity—aggregate demand and aggregate supply; Macroeconomic objectives; Economics of inequality and poverty; Demand management (demand side policies)—monetary policy; Demand management—fiscal policy; Supply-side policies
- **Unit 4**: The global economy: Benefits of international trade; Types of trade protection; Arguments for and against trade control/protection; Economic integration; Exchange rates; Balance of payments; Sustainable development; Measuring development; Barriers to economic growth and/or economic development; Economic growth and/or economic development strategies

Assessment

Higher Level

Internal Assessment   **20%**

This component is internally assessed by the teacher and externally moderated by the IB at the end of the course. Students produce a portfolio of three commentaries, based on different units of the syllabus (excluding the introductory unit) and on published extracts from the news media. Each of the three commentaries should use a different key concept as a lens through which to analyse the published extracts.

External Examination   80%

Paper 1   1 hour and 15 minutes   20%
An extended response paper (25 marks). Syllabus content including HL extension material. Students answer one question from a choice of three.

Paper 2   1 hour and 45 minutes   30%
A data response paper. Syllabus content including HL extension material. Includes some quantitative questions. Students answer one question from a choice of two.

Paper 3   1 hour and 45 minutes   30%
A policy paper. Syllabus content including HL extension material. Includes both quantitative and qualitative questions. Students answer two compulsory questions.

Standard Level

Internal Assessment   30%

This component is internally assessed by the teacher and externally moderated by the IB at the end of the course. Students produce a portfolio of three commentaries, based on different units of the syllabus (excluding the introductory unit) and on published extracts from the news media. Each of the three commentaries should use a different key concept as a lens through which to analyse the published extracts.

External Examination   70%

Paper 1   1 hour and 15 minutes   30%
An extended response paper. Syllabus content (excluding HL extension material) Students answer one question from a choice of three.

Paper 2   1 hour and 45 minutes   40%
A data response paper. Syllabus content (excluding HL extension material). Includes some quantitative questions. Students answer one question from a choice of two.

Geography – Higher Level and Standard Level

Nature of the Subject

Geography is a dynamic subject that is firmly grounded in the real world and focuses on the interactions between individuals, societies and physical processes in both time and space. It seeks to identify trends and patterns in these interactions. It also investigates the way in which people adapt and respond to change, and evaluates actual and possible management strategies associated with such change. Geography describes and helps to explain the similarities and differences between different places. These may be defined on a variety of scales and from the perspectives of a different range of actors, with varying powers over decision-making processes.

Within individuals and societies subjects, geography is distinctive in its spatial dimension and occupies a middle ground between social or human sciences and natural sciences. The Diploma Programme geography course integrates physical, environmental and human geography, and ensures that students acquire elements of both socio-economic and scientific methodologies. Geography takes advantage of its position to examine relevant concepts and ideas from a wide variety of disciplines. This helps students develop life skills and have an appreciation of, and a respect for, alternative approaches, viewpoints and ideas.

Students at SL and HL in geography are presented with a syllabus that has optional geographic themes and a common SL and HL core. HL students also study the HL core extension. The syllabus requires the development of certain skills, attributes and knowledge as described in the assessment objectives, which are externally assessed. Although the skills and activity of studying geography are common to both SL and HL students, HL students are required to acquire a further body of knowledge, to demonstrate critical evaluation and to further synthesize the concepts in the HL extension.

In summary:

- SL students study two optional themes; HL students study three optional themes, providing further breadth.
- Both SL and HL students study the core geographic perspectives—global change.
- HL students study the HL extension geographic perspectives—global interactions, and further examine, evaluate and synthesize the prescribed concepts, which by their nature are complex, contestable, interlinked and require holistic treatment. This provides further depth at HL.
- Both SL and HL students complete a fieldwork study for the internal assessment.

Key Concepts in Geography: scale, place, process, power, possibility, spatial interaction

The opportunity to have concepts in the foreground of the curriculum topics and the focus for geographic inquiry allow for more discussion, application of thinking skills, and transparent assessments. Students are required to discuss or evaluate in a way that shows conceptual insight into the context of the expected knowledge and understanding. The application of geographic skills allow for the synthesis of knowledge and ideas, and bring understanding of **concepts** and **contexts** together through the study of specified or appropriate **content**.
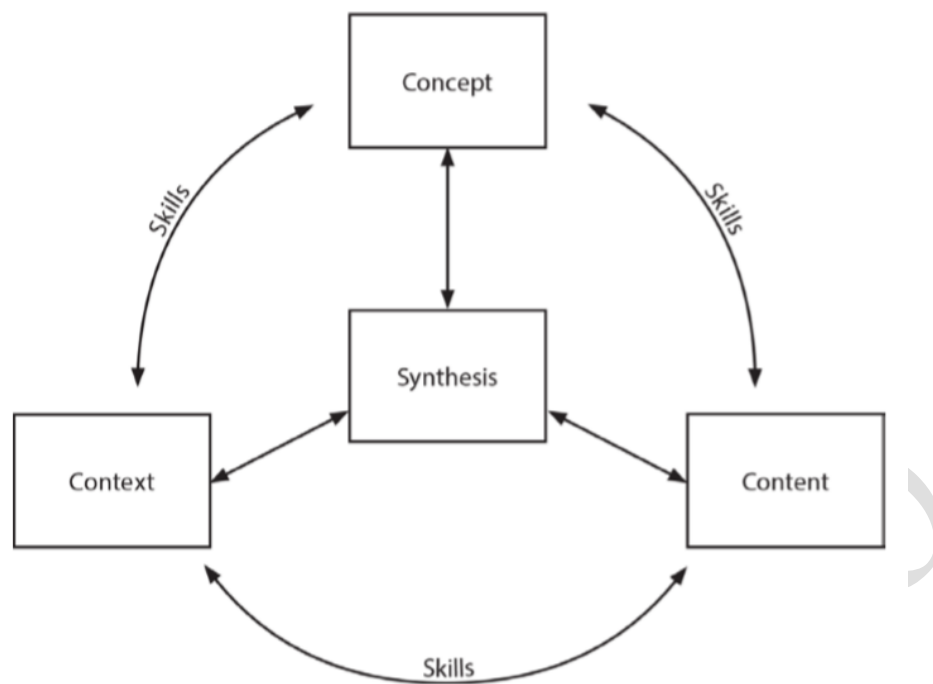
Course Content

Part 1: **Geographic themes—seven options**

Two options are studied at SL, and three at HL
- Freshwater—drainage basins
- Oceans and coastal margins
- Extreme environments
- Geophysical hazards
- Leisure, tourism and sport
- Food and health
- Urban environments

Part 2: **SL and HL core**

Geographic perspectives—global change
- Population distribution—changing population
- Global climate—vulnerability and resilience
- Global resource consumption and security

Part 2: **HL extension—global interactions**

Geographic perspectives—global interactions
- Power, places and networks
- Human development and diversity
- Global risks and resilience

Each option or unit topic is structured to emphasise the conceptual focus of the geographic inquiry, with details relating to the prescribed geographic knowledge and understanding.

Only topics and details in the syllabus are selected for assessment in the examination papers, although references from the introductory sections of the optional themes, the SL/HL core theme, and the HL extension may occasionally be used to set the context for examination questions..

The **"**Geographic skills" section lists the skills required in the course that enable students to apply the techniques of geography and use appropriate terminology. These skills are covered throughout the whole syllabus (at both SL and HL), delivered through the content and context of the optional themes (the SL/HL core theme and HL extension, as appropriate), and fully integrated into teaching. Students are expected to demonstrate competence in the use of these skills in both external assessment examination papers and internal assessment, as and when appropriate.

Students (SL/HL) also undertake fieldwork, leading to one written report based on a fieldwork question, information collection and analysis with evaluation.

Assessment

Higher Level

Internal Assessment   **20%**

Written report based on fieldwork.

External Assessment   **80%**

Paper 1   *2 hours 15 minutes*   *35%*
45 minutes per option question; each option has a structured
question and one extended answer question from a choice of two.

Paper 2   *1 hour 15 minutes*   *25%*
Section A : three structured questions, based on each SL/HL core unit
Section B: infographic or visual stimulus, with structured questions
Section C: one extended answer question from a choice of two

Paper 3   *1 hour*   *20%*
Choice of three extended answer questions, with two parts, based on
each HL core unit

Standard Level

Internal Assessment   **25%**

Written report based on fieldwork.

External Assessment   **75%**

Paper 1   *1 hour 30 minutes*   *35%*
45 minutes per option question; each option has a structured question

and one extended answer question from a choice of two.

Paper 2   *1 hour 15 minutes*   *40%*
Section A : three structured questions, based on each SL/HL core unit
Section B: infographic or visual stimulus, with structured questions
Section C: one extended answer question from a choice of two

History – Higher Level and Standard Level

Nature of the Subject

History is a dynamic, contested, evidence-based discipline that involves an exciting engagement with the past. It is a rigorous intellectual discipline, focused around key historical concepts such as change, causation and significance. History is an exploratory subject that fosters a sense of inquiry. It is also an interpretive discipline, allowing opportunity for engagement with multiple perspectives and a plurality of opinions. Studying history develops an understanding of the past, which leads to a deeper understanding of the nature of humans and of the world today. The IB Diploma Programme (DP) history course is a world history course based on a comparative and multiperspective approach to history. It involves the study of a variety of types of history, including political, economic, social and cultural, and provides a balance of structure and flexibility. The course emphasizes the importance of encouraging students to think historically and to develop historical skills as well as gaining factual knowledge. It puts a premium on developing the skills of critical thinking, and on developing an understanding of multiple interpretations of history. In this way, the course involves a challenging and demanding critical exploration of the past.

Key Concepts in History: change, continuity, causation, consequence, significance, perspective

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Course Content

PRESCRIBED SUBJECTS

Students at both levels are also required to study one subject prescribed by the IBO. The list of prescribed subjects for the 2020 examination session is as below:

One prescribed subject must be chosen for study from the following list.

1. Military leaders

2. Conquest and its impact

3. The move to global war

4. Rights and protest

5. Conflict and intervention

For each prescribed subject two case studies, from different regions of the world, are

identified. Both of the case studies for the prescribed subject selected must be studied.

WORLD HISTORY TOPICS
This element of the course explores key topics in world history. Teachers should select **two** topics from the following 12 options.

1. Society and economy (750–1400)

2. Causes and effects of medieval wars (750–1500)

3. Dynasties and rulers (750–1500)

4. Societies in transition (1400–1700)

5. Early Modern states (1450–1789)

6. Causes and effects of Early Modern wars (1500–1750)

7. Origins, development and impact of industrialization (1750–2005)

8. Independence movements (1800–2000)

9. Evolution and development of democratic states (1848–2000)

10. Authoritarian states (20th century)

11. Causes and effects of 20th-century wars

12. The Cold War: Superpower tensions and rivalries (20th century)

At SOS-HGIC, the topics which are covered vary from year to year, depending on the interests of the students.

HL option: History of Africa and the Middle East

Higher Level students are also required to study an option. At SOS-HGIC this is the History of Africa, and the Middle East. The topics included in this option are listed below. **Three** sections must be selected for study.

1. The 'Abbasid dynasty (750–1258)

2. The Fatimids (909–1171)

3. The Crusades (1095–1291)

4. The Ottomans (1281–1566)

5. Trade and the rise and decline of African states and empires (800–1600)

6. Pre-colonial African states (1800–1900)

7. The slave trade in Africa and the Middle East (1500–1900)

8. European imperialism and the partition of Africa (1850–1900)

9. Response to European imperialism (1870–1920)

10. Africa under colonialism (1890–1980)

11. 20th-century nationalist and independence movements in Africa

12. The Ottoman Empire (c1800–1923)

13. War and change in the Middle East and North Africa 1914–1945

14. Africa, international organizations and the international community (20th century)

15. Developments in South Africa 1880–1994

16. Social and cultural developments in Africa in the 19th and 20th centuries

17. Post-independence politics in Africa to 2005

Assessment

Higher Level

<u>Internal Assessment</u>   <u>20%</u>

Historical investigation
Students are required to complete a historical investigation into a topic of their choice.

<u>External Assessment</u>   <u>80%</u>

Paper 1   1 hour   20%
Source-based paper based on the five prescribed subjects. Choose **one** prescribed subject from
a choice of five. Answer four structured questions.
(24 marks)

Paper 2   1 hour 30 minutes   25%
Essay paper based on the 12 world history topics. Answer two essay questions on two
different topics. (30 marks)

Paper 3   2 hours 30 minutes   35%
Separate papers for each of the four regional options. For the selected region, answer three
essay questions. (45 marks)

Standard Level

<u>Internal Assessment</u>   <u>25%</u>

Historical investigation
Students are required to complete a historical investigation into a topic of their choice.

<u>External Assessment</u>   <u>75%</u>

Paper 1   1 hour   30%
Source-based paper based on the five prescribed subjects. Choose **one** prescribed subject from
a choice of five. Answer four structured questions.

Paper 2   1 hour 30 minutes   45%
Essay paper based on the 12 world history topics. Answer two essay questions on two
different topics.

Social and Cultural Anthropology – Higher Level and Standard Level

Nature of the Subject

Social and cultural anthropology is the comparative study of culture and human societies. Anthropologists seek an understanding of humankind in all its diversity. This understanding is reached through the study of societies and cultures and the exploration of the general principles of social and cultural life. Social and cultural anthropology places special emphasis on comparative perspectives that make explicit our own cultural assumptions and those of others. Anthropologists explore problems and issues associated with the complexity of societies in local, regional and global contexts, and as such, it is a dynamic, exciting and highly relevant subject.

The social and cultural anthropology course for both SL and HL students is designed to engage students with the concepts, methods, language and theories of the discipline. At the heart of the course is the practice of anthropologists, and the insights they produce as a result of this in the form of ethnographic material. Students are given the opportunity through their own experiential internal assessment activity to engage in authentic anthropological practice. This provides an opportunity for students to explore how the strange can become familiar and the familiar strange.

Although social and cultural anthropology shares much of its theory with other social sciences, it is distinct in a number of ways. These distinctions include a research tradition of participant observation and an in-depth, empirical study of social groups. Areas of anthropological inquiry in this course are: belonging; classifying the world; communication, expression and technology; conflict; development; health, illness and healing; movement, time and space; production, exchange and consumption; and the body. These areas are explored through the key anthropological concepts of belief and knowledge, change, culture, identity, materiality, power, social relations, society, and symbolism.

Moreover, anthropology contributes to an understanding of contemporary real-world issues such as war and conflict, the environment, poverty, injustice, inequality, and human and cultural rights, providing a uniquely rich context in which to explore them. The study of anthropology offers critical insights into the continuities and dynamics of social change, the development of societies and what it means to live with differences.

Social and cultural anthropology contributes a distinctive approach to intercultural awareness and understanding, which embodies the essence of an IB education. As a course, it offers an opportunity for students to become engaged with anthropological approaches and to develop critical, reflexive knowledge in relation to their own positions as global actors. Additionally, it fosters the development of citizens who are globally aware, internationally minded, and ethically sensitive. In other words, it is transformative: transforming the way students see others, the way they view themselves, and ultimately how they act in the world.

Key Concepts in Social and Cultural Anthropology: belief and knowledge, change, culture, identity, materiality, power, social relations, society, symbolism

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Course Content

Part 1: Engaging with anthropology

The three areas of engaging with anthropology are as follows.
- The language of anthropology: key concepts and inquiry-specific concepts
- The practice of anthropology: doing anthropology—the ethnographic method and ethical considerations
- Anthropological thinking: anthropological theories

Part 2: Engaging with ethnography
SL students must complete **three** areas of inquiry from the following nine—one from each group. HL students must complete **four** areas of inquiry from the following nine—one from each group and the fourth chosen from any of the three groups.

Focus on concepts
A teacher may choose to explore a particular concept and select short ethnographic pieces that help to illustrate this concept in different cultures and societies, and across different periods in time.

Focus on ethnographic material
When teaching ethnography, the concepts that are studied in class are those that the ethnographer focuses on in the text. It is also the ethnography in this case that determines the content that is learned, in terms of the specific anthropological concepts, methodological issues and relevant theories.

Focus on theories and methods
Alternatively, teachers may want to explore a particular anthropological theory, and choose ethnographic material that utilizes this theory in its application to and interpretation of ethnographic data. This approach demonstrates that anthropologists who use a specific theoretical framework may be concerned with exploring a particular concept—for example, the use of feminist or Marxist theories when examining issues of power.
Or, teachers may want to explore a particular methodological or ethical issue, and choose ethnographic material that demonstrates or illustrates this issue. The focus may be on how different anthropologists approach the same issue in different contexts.

1. **Group 1**
   o Classifying the world
   o Health, illness and healing
   o The body

2. **Group 2**
   o Belonging
   o Communication, expression and technology
   o Movement, time and space

3. **Group 3**
   o Conflict
   o Development
   o Production, exchange and consumption

Part 3: Engaging in anthropological practice

Doing anthropology at SL: Limited fieldwork (observation, second data collection and critical reflection)

Doing anthropology at HL: Fieldwork

Assessment

Higher Level

Internal Assessment   25%

Three compulsory activities based on part 3 of the syllabus, engaging in anthropological practice.
1. Fieldwork proposal form
2. Critical reflection
3. Research report and reflection

External Assessment   75%

Paper 1   2 hours   30%
Section A: three compulsory questions based on an unseen text, covering part 1 of the syllabus, engaging with anthropology.
One compulsory question. This question will be one of the six "big" anthropological questions from part 1 of the course, engaging with anthropology.
Section B: HL extension—anthropological ethics
One compulsory question based on one of two stimuli (visual and written).

Paper 2   2 hours 30 minutes   45%
Section A: one compulsory question based on part 2 of the syllabus, engaging with ethnography. This question requires students to make meaningful connections between a key concept, area of inquiry and real-world issue.
Section B: nine areas of inquiry, each containing two questions; students choose **two** questions from **two different** areas of inquiry they have studied. Neither of these two areas of inquiry must be the same as the area of inquiry used in Section A. The questions are based on part 2 of the syllabus, engaging with ethnography.

Paper 3   1 hour   20%
Five questions based on theoretical perspectives in anthropology. Students choose one question to be answered in essay form. (20 marks)

Standard Level

Internal Assessment   20%

Four compulsory activities based on part 3 of the syllabus, engaging in anthropological practice.
1. Observation report
2. Methodological and conceptual extension of initial fieldwork
3. Second fieldwork data collection and analysis
4. Critical reflection

External Assessment   80%

Paper 1   1 hour 30 minutes   40%
Three compulsory questions based on an unseen text, covering part 1 of the syllabus, engaging with anthropology.
One compulsory question. This question will be one of the six "big" anthropological questions from part 1 of the syllabus engaging with anthropology.

Paper 2   1 hour 30 minutes   40%
Section A: one compulsory question based on part 2 of the syllabus, engaging with ethnography. This question requires students to make meaningful connections between a key concept, area of inquiry and real-world issue.
Section B: nine areas of inquiry, each containing two questions; students choose one question from one of the areas of inquiry they have studied. This must not be the same area of inquiry used in section A. The questions are based on part 2 of the syllabus, engaging with ethnography.

For queries specifically concerned with the Economics, Geography, History and Social and Cultural Anthropology programmes, contact:
Dr. George Grandy-Hallow, Head of Humanities Department, SOS-HGIC.

Information Technology in a Global Society
Higher Level and Standard Level

Nature of the Subject

The IB Diploma Programme 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. Although ITGS shares methods of critical investigation and analysis with other social sciences, it also considers social and ethical considerations that are common to other subjects in group 3. Students come into contact with IT on a daily basis because it is so pervasive in the world in which we live. This increasingly widespread use of IT inevitably raises important questions with regard to the social and ethical considerations that shape our society today. ITGS offers an opportunity for a systematic study of these considerations, whose range is such that they fall outside the scope of any other single discipline. The nature of the subject is defined by the use of fundamental ITGS terms.

• Information technology (IT) is the study, design, development, implementation, support or maintenance of computer-based information systems.

• Social and ethical significance refers to the effects that the development, implementation and use of information technology has on individuals and societies. Social impacts and ethical considerations are not mutually exclusive and are therefore categorized as a single entity. However, in general:

• Social impacts tend to refer to the effects of IT on human life

• Ethical considerations tend to refer to the responsibility and accountability involved in the design and implementation of IT.

• An information system is a collection of people, information technologies, data, processes and policies organized to accomplish specific functions and solve specific problems.

ITGS has links with subjects not included in group 3, notably computer science, but it should be noted that there are clear differences between the subjects.

ITGS	Computer Science
In ITGS, people are central to the study of the subject. This is underpinned by a secure knowledge of the technology within the specified IT system. This technical knowledge ensures that the discussion of the effects of a new IT system on people will not be superficial.	In computer science, the emphasis is on a detailed knowledge of the computer system, followed by an awareness of its effects on people.
ITGS considers the internal workings of an IT system only to the extent of how it contributes to the understanding of a social impact or ethical issue.	Computer science emphasizes a detailed understanding of the logic and internal workings of a system.
ITGS is concerned with the development of IT systems, with particular emphasis on the effects on clients and end-users.	Computer science is concerned with algorithmic thinking and the ways in which a real-world problem can be decomposed in order to construct a working computable solution.
ITGS looks to implement a new IT system based on the use of currently available software.	Computer science looks to develop a new system using existing building blocks or by creating a totally novel approach as appropriate. This may involve the writing of new code in an appropriate programming environment.
ITGS is concerned with activities such as choosing and using a spreadsheet, finding ways of using it more effectively, and educating other people about its use. It is concerned with the effects of using the software and obtaining reliable results that are beneficial to all who are affected by it.	Computer science examines real-world problems and produces algorithms from which useful software can be derived. The computer scientist creates the initial concepts and designs to produce appropriate and novel solutions to problems or by adapting existing solutions.

The main difference between ITGS and computer science relates to the focus of study. ITGS is about how people are affected by systems already in use and those planned for the future. Computer science looks first at the technology and then later at its interaction with those affected by it. Some degree of overlap between the two subjects is intentional, inevitable and desirable.

Distinction between SL and HL

Students at standard level (SL) and higher level (HL) in ITGS are presented with a syllabus that has a common core consisting of three strands: social and ethical significance, application to specified scenarios, and IT systems. Higher level students also study the HL extension.

The HL course in ITGS differs from the SL course in ITGS as follows. HL students study the following as part of the HL extension, which consists of two additional topics in the IT systems strand: IT systems in organizations: robotics, artificial intelligence and expert systems.

The HL course has an additional externally assessed component that comprises a pre-seen case study based on a fictitious organization; this allows students to research various aspects of the subject, which may include new technical concepts and additional subject content, in greater depth. The HL topic "IT systems in organizations" requires a study of the theoretical frameworks behind the development of IT-based products and the management of IT projects. This builds on the "Introduction to project management" topic in the SL/HL core, which provides students with the skills and knowledge necessary to develop the work for the internal assessment (the project).

Course Content

At either level (SL or HL) the ITGS course consists of three compulsory interconnected strands that reflect the integrated nature of the course.
> **Strand 1: Social and ethical significance**
> **Strand 2: Application to specified scenarios**
> **Strand 3: IT systems**

Strand 1: Social and Ethical Significance

1.1 Reliability and integrity
1.2 Security
1.3 Privacy and anonymity
1.4 Intellectual property
1.5 Authenticity
1.6 The digital divide and equality of access
1.7 Surveillance
1.8 Globalization and cultural diversity
1.9 Policies
1.10 Standards and protocols
1.11 People and machines
1.12 Digital citizenship

Strand 2: Application to Specified Scenarios

Scenarios based on real-life situations must be used when addressing specified IT developments.
Students must study the following 6 themes.
2.1 Business and employment
2.2 Education and training
2.3 Environment
2.4 Health
2.5 Home and leisure
2.6 Politics and government

Strand 3: IT Systems

The terminology, concepts and tools relating to specified IT developments.
Students must study the following 9 topics.
3.1 Hardware
3.2 Software
3.3 Networks
3.4 Internet
3.5 Personal and public communications
3.6 Multimedia/digital media
3.7 Databases
3.8 Spreadsheets, modelling and simulations
3.9 Introduction to project management

HL extension
Students must study the following topics.

3.10 IT systems in organizations

3.11 Robotics, artificial intelligence and expert systems

3.12 Information systems specific to the annually issued case study

HL Assessment

Internal Assessment   20%

Project (30 hours)

The development of an original IT product for a specified client. Students must produce:

    a cover page using prescribed format
    an original IT product
    documentation supporting the product (word limit 2,000 words)
    a screencast.

                                                    (word limit 2,000 words).

External Examination   80%

Paper 1 (2 hours 15 minutes)   35%
Seven structured questions in **two** sections that assess in an integrated way the three strands of the syllabus.

- Social and ethical significance
- Application to specific scenarios
- IT systems

Section A
Students answer two of three structured questions on any of the core topics.

Section B
Students answer **one** of four structured questions based on the HL extension topics.

Paper 2 (1 hour 15 minutes)   *20%*
This paper consists of one unseen article.
Students are required to write a response to this article.

Paper 3 (1 hour 15 minutes)   *25%*
Four questions based on a pre-seen case study.

SL Assessment

Internal Assessment   30%

Project (30 hours)

The development of an original IT product for a specified client. Students must produce:

    a cover page using prescribed format
    an original IT product
    documentation supporting the product (word limit 2,000 words)
    a screencast.

(word limit 2,000 words).

External Examination   70%

Paper 1 (1 hour 30 minutes)   *40%*
Four structured questions that assess in an integrated way the three strands of the syllabus.
- Social and ethical significance
- Application to specific scenarios
- IT systems
Students answer two of four structured questions on any of the core topics.

Paper 2 (1 hour 15 minutes)   *30%*
This paper consists of one unseen article.
Students are required to write a response to this article.

For queries specifically concerned with the ITGS programme, contact:
Mr. Prosper Habada, Head of IT Department, SOS-HGIC.

GROUP 4

Biology - Higher Level and Standard Level

Nature of the Subject

Biology is the study of life. The first organisms appeared on the planet over 3 billion years ago and, through reproduction and natural selection, have given rise to the 8 million or so different species alive today. Estimates vary, but over the course of evolution 4 billion species could have been produced. Most of these flourished for a period of time and then became extinct as new, better adapted species took their place. There have been at least five periods when very large numbers of species became extinct and biologists are concerned that another mass extinction is under way, caused this time by human activity. Nonetheless, there are more species alive on Earth today than ever before. This diversity makes biology both an endless source of fascination and a considerable challenge.

An interest in life is natural for humans; not only are we living organisms ourselves, but we depend on many species for our survival, are threatened by some and co-exist with many more. From the earliest cave paintings to the modern wildlife documentary, this interest is as obvious as it is ubiquitous, as biology continues to fascinate young and old all over the world.

The word "biology" was coined by German naturalist Gottfried Reinhold in 1802 but our understanding of living organisms only started to grow rapidly with the advent of techniques and technologies developed in the 18th and 19th centuries, not least the invention of the microscope and the realization that natural selection is the process that has driven the evolution of life.

Biologists attempt to understand the living world at all levels using many different approaches and techniques. At one end of the scale is the cell, its molecular construction and complex metabolic reactions. At the other end of the scale biologists investigate the interactions that make whole ecosystems function.

Many areas of research in biology are extremely challenging and many discoveries remain to be made. Biology is still a young science and great progress is expected in the 21st century. This progress is sorely needed at a time when the growing human population is placing ever greater pressure on food supplies and on the habitats of other species, and is threatening the very planet we occupy.

Course Content

The course content consists of three sections:
- The Core
- The Additional Higher Level Material (AHL)
- The Options (OPT)

CORE
Both Higher Level and Standard Level students complete this core section of the syllabus.

Topic 1: Cell biology

1.1 Introduction to cells
1.2 Ultrastructure of cells
1.3 Membrane structure
1.4 Membrane transport
1.5 The origin of cells
1.6 Cell division

Topic 2: Molecular biology
2.1 Molecules to metabolism
2.2 Water
2.3 Carbohydrates and lipids
2.4 Proteins
2.5 Enzymes
2.6 Structure of DNA and RNA
2.7 DNA replication, transcription and translation
2.8 Cell respiration
2.9 Photosynthesis

Topic 3: Genetics
3.1 Genes
3.2 Chromosomes
3.3 Meiosis
3.4 Inheritance
3.5 Genetic modification and biotechnology

Topic 4: Ecology
4.1 Species, communities and ecosystems
4.2 Energy flow
4.3 Carbon cycling
4.4 Climate change

Topic 5: Evolution and biodiversity
5.1 Evidence for evolution
5.2 Natural selection
5.3 Classification of biodiversity
5.4 Cladistics

Topic 6: Human physiology
6.1 Digestion and absorption
6.2 The blood system
6.3 Defence against infectious disease
6.4 Gas exchange
6.5 Neurons and synapses
6.6 Hormones, homeostasis and reproduction

ADDITIONAL HIGHER LEVEL (AHL)

Topic 7: Nucleic acid
7.1 DNA structure and replication
7.2 Transcription and gene expression

7.3 Translation

Topic 8: Metabolism, cell respiration and photosynthesis
8.1 Metabolism
8.2 Cell respiration
8.3 Photosynthesis

Topic 9: Plant biology
9.1 Transport in the xylem of plants
9.2 Transport in the phloem of plants
9.3 Growth in plants
9.4 Reproduction in plants

Topic 10: Genetics and evolution
10.1 Meiosis
10.2 Inheritance
10.3 Gene pools and speciation

Topic 11: Animal physiology
11.1 Antibody production and vaccination
11.2 Movement
11.3 The kidney and osmoregulation
11.4 Sexual reproduction

OPTIONS (OPT)

A: Neurobiology and behaviour
Core topics
A.1 Neural development
A.2 The human brain
A.3 Perception of stimuli
Additional higher level topics
A.4 Innate and learned behaviour
A.5 Neuropharmacology
A.6 Ethology

B: Biotechnology and bioinformatics
Core topics
B.1 Microbiology: organisms in industry
B.2 Biotechnology in agriculture
B.3 Environmental protection
Additional higher level topics
B.4 Medicine
B.5 Bioinformatics

C: Ecology and conservation
Core topics
C.1 Species and communities
C.2 Communities and ecosystems
C.3 Impacts of humans on ecosystems

C.4 Conservation of biodiversity
Additional higher level topics
C.5 Population ecology
C.6 Nitrogen and phosphorus cycles

D: Human physiology
Core topics
D.1 Human nutrition
D.2 Digestion
D.3 Functions of the liver
D.4 The heart
Additional higher level topics
D.5 Hormones and metabolism
D.6 Transport of respiratory gases

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Assessment

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Internal Assessment   20%

Both Levels

The internal assessment, worth 20% of the final assessment, consists of one scientific investigation. The individual investigation should cover a topic that is commensurate with the level of the course of study. Student work is internally assessed by the teacher and externally moderated by the IB. The performance in internal assessment at both SL and HL is marked against common assessment criteria, with a total mark out of 24.

The internal assessment task will be one scientific investigation taking about 10 hours and the write-up should be about 6 to 12 pages long. Some of the possible tasks include:
• a hands-on laboratory investigation
• using a spreadsheet for analysis and modelling
• extracting data from a database and analysing it graphically
• producing a hybrid of spreadsheet/database work with a traditional hands-on investigation
• using a simulation provided it is interactive and open-ended

This component is assessed internally by the subject teacher, who submits a specified number of samples at the end of the course for external moderation.

External Examination   80%

Higher Level Examination

Paper 1   1 hour   20%
40 multiple-choice questions on core and AHL material,

Paper 2   2 hours 15 minutes   36%
Data-based question, short-answer and extended-response questions on core and AHL
material. Two out of three extended response questions to be attempted by candidates

Paper 3   1 hour 15 minutes   24%

Section A: candidates answer all questions, two to three short-answer questions based on experimental skills and techniques, analysis and evaluation, using unseen data linked to the core material.
Section B: short-answer and extended-response questions from one option.

Standard Level Examination

Paper 1   *45 minutes*   *20%*
30 multiple-choice questions on core material

Paper 2   *1 hour 15 minutes*   *40%*
Data-based question, short-answer and extended-response questions on core material.
One out of two extended response questions to be attempted by candidates.

Paper 3   *1 hour*   *20%*
Section A: candidates answer all questions, two to three short-answer questions based on experimental skills and techniques, analysis and evaluation, using unseen data linked to the core and AHL material.
Section B: short-answer and extended-response questions from one option.

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Required prior mathematical knowledge for Biology

All Diploma Programme biology students should be able to:

- perform the basic arithmetic functions: addition, subtraction, multiplication and division

- carry out calculations involving means, decimals, fractions, percentages and ratios

- represent and interpret frequency data in the form of bar charts, graphs and histograms, including direct and inverse proportion

- plot graphs (with suitable scales and axes) involving two variables that show linear or non-linear relationships

- plot and interpret scattergraphs to identify a correlation between two variables, and appreciate that the existence of a correlation does not establish a causal relationship

- determine the mode and median of a set of data, calculate and analyse standard deviation

- select statistical tests appropriate for the analysis of particular data and interpret the results.

Chemistry Higher Level and Standard Level

Nature of the Subject

Chemistry is an experimental science that combines academic study with the acquisition of practical and investigational skills. It is often called the central science, as chemical principles underpin both the physical environment in which we live and all biological systems. Apart from being a subject worthy of study in its own right, chemistry is a prerequisite for many other courses in higher education, such as medicine, biological science and environmental science, and serves as useful preparation for employment.

Earth, water, air and fire are often said to be the four classical elements. They have connections with Hinduism and Buddhism. The Greek philosopher Plato was the first to call these entities elements. The study of chemistry has changed dramatically from its origins in the early days of alchemists, who had as their quest the transmutation of common metals into gold. Although today alchemists are not regarded as being true scientists, modern chemistry has the study of alchemy as its roots. Alchemists were among the first to develop strict experimentation processes and laboratory techniques. Robert Boyle, often credited with being the father of modern chemistry, began experimenting as an alchemist.

Despite the exciting and extraordinary development of ideas throughout the history of chemistry, certain things have remained unchanged. Observations remain essential at the very core of chemistry, and this sometimes requires decisions about what to look for. The scientific processes carried out by the most eminent scientists in the past are the same ones followed by working chemists today and, crucially, are also accessible to students in schools. The body of scientific knowledge has grown in size and complexity, and the tools and skills of theoretical and experimental chemistry have become so specialized, that it is difficult (if not impossible) to be highly proficient in both areas. While students should be aware of this, they should also know that the free and rapid interplay of theoretical ideas and experimental results in the public scientific literature maintains the crucial link between these fields.

The Diploma Programme chemistry course includes the essential principles of the subject but also, through selection of an option, allows teachers some flexibility to tailor the course to meet the needs of their students. The course is available at both standard level (SL) and higher level (HL), and therefore accommodates students who wish to study chemistry as their major subject in higher education and those who do not.

At the school level both theory and experiments should be undertaken by all students. They should complement one another naturally, as they do in the wider scientific community. The Diploma Programme chemistry course allows students to develop traditional practical skills and techniques and to increase facility in the use of mathematics, which is the language of science. It also allows students to develop interpersonal skills, and digital technology skills, which are essential in 21st century scientific endeavour and are important life-enhancing, transferable skills in their own right.

Course Content

The course content consists of three sections:
- The Core
- The Additional Higher Level Material (AHL)

- The Options (OPT): 1 option required

CORE
Both Higher Level and Standard Level students complete this core section of the syllabus.

Topic 1: Stoichiometric relationships
1.1 Introduction to the particulate nature of matter and chemical change
1.2 The mole concept
1.3 Reacting masses and volumes

Topic 2: Atomic structure
2.1 The nuclear atom
2.2 Electron configuration

Topic 3: Periodicity
3.1 Periodic table
3.2 Periodic trends

Topic 4: Chemical bonding and structure
4.1 Ionic bonding and structure
4.2 Covalent bonding
4.3 Covalent structures
4.4 Intermolecular forces
4.5 Metallic bonding

Topic 5: Energetics/thermochemistry
5.1 Measuring energy changes
5.2 Hess's Law
5.3 Bond enthalpies

Topic 6: Chemical kinetics
6.1 Collision theory and rates of reaction

Topic 7: Equilibrium
7.1 Equilibrium

Topic 8: Acids and bases
8.1 Theories of acids and bases
8.2 Properties of acids and bases
8.3 The pH scale
8.4 Strong and weak acids and bases
8.5 Acid deposition

Topic 9: Redox processes
9.1 Oxidation and reduction
9.2 Electrochemical cells

Topic 10: Organic chemistry
10.1 Fundamentals of organic chemistry
10.2 Functional group chemistry

Topic 11: Measurement and data processing
11.1 Uncertainties and errors in measurement and results
11.2 Graphical techniques
11.3 Spectroscopic identification of organic compounds

ADDITIONAL HIGHER LEVEL (AHL)

Topic 12: Atomic structure
12.1 Electrons in atoms

Topic 13: The periodic table—the transition metals
13.1 First-row d-block elements
13.2 Coloured complexes

Topic 14: Chemical bonding and structure
14.1 Covalent bonding and electron domain and molecular geometries
14.2 Hybridization

Topic 15: Energetics/thermochemistry
15.1 Energy cycles
15.2 Entropy and spontaneity

Topic 16: Chemical kinetics
16.1 Rate expression and reaction mechanism
16.2 Activation energy

Topic 17: Equilibrium
17.1 The equilibrium law

Topic 18: Acids and bases
18.1 Lewis acids and bases
18.2 Calculations involving acids and bases
18.3 pH curves

Topic 19: Redox processes
19.1 Electrochemical cells

Topic 20: Organic chemistry
20.1 Types of organic reactions
20.2 Synthetic routes
20.3 Stereoisomerism

Topic 21: Measurement and analysis
21.1 Spectroscopic identification of organic compounds

OPTIONS (OPT)

A: Materials
Core topics
A.1 Materials science introduction
A.2 Metals and inductively coupled plasma (ICP) spectroscopy

A.3 Catalysts
A.4 Liquid crystals
A.5 Polymers
A.6 Nanotechnology
A.7 Environmental impact—plastics
Additional higher level topics
A.8 Superconducting metals and X-ray crystallography (HL only)
A.9 Condensation polymers (HL only)
A.10 Environmental impact—heavy metals (HL only)

B: Biochemistry
Core topics
B.1 Introduction to biochemistry
B.2 Proteins and enzymes
B.3 Lipids
B.4 Carbohydrates
B.5 Vitamins
B.6 Biochemistry and the environment
Additional higher level topics
B.7 Proteins and enzymes (HL only)
B.8 Nucleic acids (HL only)
B.9 Biological pigments (HL only)
B.10 Stereochemistry in biomolecules (HL only)

C: Energy
Core topics
C.1 Energy sources
C.2 Fossil fuels
C.3 Nuclear fusion and fission
C.4 Solar energy
C.5 Environmental impact—global warming
Additional higher level topics
C.6 Electrochemistry, rechargeable batteries and fuel cells (HL only)
C.7 Nuclear fusion and nuclear fission (HL only)
C.8 Photovoltaic and dye-sensitized solar cells (HL only)

D: Medicinal chemistry
Core topics
D.1 Pharmaceutical products and drug action
D.2 Aspirin and penicillin
D.3 Opiates
D.4 pH regulation of the stomach
D.5 Anti-viral medications
D.6 Environmental impact of some medications
Additional higher level topics
D.7 Taxol—a chiral auxiliary case study (HL only)
D.8 Nuclear medicine (HL only)
D.9 Drug detection and analysis (HL only)

Assessment

Internal Assessment   20%

Both Levels

The internal assessment, worth 20% of the final assessment, consists of one scientific investigation. The individual investigation should cover a topic that is commensurate with the level of the course of study. Student work is internally assessed by the teacher and externally moderated by the IB. The performance in internal assessment at both SL and HL is marked against common assessment criteria, with a total mark out of 24.

The internal assessment task will be one scientific investigation taking about 10 hours and the write-up should be about 6 to 12 pages long. Some of the possible tasks include:
• a hands-on laboratory investigation
• using a spreadsheet for analysis and modelling
• extracting data from a database and analysing it graphically
• producing a hybrid of spreadsheet/database work with a traditional hands-on investigation
• using a simulation provided it is interactive and open-ended

This component is assessed internally by the subject teacher, who submits a specified number of samples at the end of the course for external moderation.

External Assessment   76%

Three papers are taken both at the Higher and Standard levels.

Higher Level Examination

Paper 1   1 hour   20%
40 multiple-choice questions on core and AHL

Paper 2   2 hours 15 minutes   36%
Short-answer and extended-response questions on the core and AHL material

Paper 3   1 hour 15 minutes   24%
This paper will have questions on core, AHL and option material
Section A: one data-based question and several short-answer questions on experimental work.
Section B: short-answer and extended-response questions from one option.

Standard Level Examination

Paper 1   45 minutes   20%
30 multiple-choice questions on core

Paper 2   1 hour 15 minutes   40%
Short-answer and extended-response questions on core material

Paper 3   1 hour   20%
This paper will have questions on core and SL option material

Section A: one data-based question and several short-answer questions on experimental work.
Section B: short-answer and extended-response questions from one option.

Required Prior Mathematical Knowledge for Chemistry

All Diploma Programme chemistry students should be able to:

- perform the basic arithmetic functions: addition, subtraction, multiplication and division

- carry out calculations involving means, decimals, fractions, percentages, ratios, approximations and reciprocals

- use standard notation

- use direct and inverse proportion

- solve simple algebraic equations

- plot graphs (with suitable scales and axes) including two variables that show linear and non-linear relationships

- interpret graphs, including the significance of gradients, changes in gradients, intercepts and areas

- interpret data presented in various forms (for example, bar charts, histograms and pie charts).

Physics – Higher Level and Standard Level

Nature of the Subject

Physics is the most fundamental of the experimental sciences, as it seeks to explain the universe itself from the very smallest particles—currently accepted as quarks, which may be truly fundamental—to the vast distances between galaxies.

Classical physics, built upon the great pillars of Newtonian mechanics, electromagnetism and thermodynamics, went a long way in deepening our understanding of the universe. From Newtonian mechanics came the idea of predictability in which the universe is deterministic and knowable. This led to Laplace's boast that by knowing the initial conditions—the position and velocity of every particle in the universe—he could, in principle, predict the future with absolute certainty. Maxwell's theory of electromagnetism described the behaviour of electric charge and unified light and electricity, while thermodynamics described the relation between energy transferred due to temperature difference and work and described how all natural processes increase disorder in the universe.

However, experimental discoveries dating from the end of the 19th century eventually led to the demise of the classical picture of the universe as being knowable and predictable. Newtonian mechanics failed when applied to the atom and has been superseded by quantum mechanics and general relativity. Maxwell's theory could not explain the interaction of radiation with matter and was replaced by quantum electrodynamics (QED). More recently, developments in chaos theory, in which it is now realized that small changes in the initial conditions of a system can lead to completely unpredictable outcomes, have led to a fundamental rethinking in thermodynamics.

While chaos theory shows that Laplace's boast is hollow, quantum mechanics and QED show that the initial conditions that Laplace required are impossible to establish. Nothing is certain and everything is decided by probability. But there is still much that is unknown and there will undoubtedly be further paradigm shifts as our understanding deepens.

Despite the exciting and extraordinary development of ideas throughout the history of physics, certain aspects have remained unchanged. Observations remain essential to the very core of physics, sometimes requiring a leap of imagination to decide what to look for. Models are developed to try to understand observations, and these themselves can become theories that attempt to explain the observations. Theories are not always directly derived from observations but often need to be created. These acts of creation can be compared to those in great art, literature and music, but differ in one aspect that is unique to science: the predictions of these theories or ideas must be tested by careful experimentation. Without these tests, a theory cannot be quantified. A general or concise statement about how nature behaves, if found to be experimentally valid over a wide range of observed phenomena, is called a law or a principle.

The scientific processes carried out by the most eminent scientists in the past are the same ones followed by working physicists today and, crucially, are also accessible to students in schools. Early in the development of science, physicists were both theoreticians and experimenters (natural philosophers). The body of scientific knowledge has grown in size and complexity, and the tools and skills of theoretical and experimental physicists have become so specialized that it is difficult (if not impossible) to be highly proficient in both areas.

While students should be aware of this, they should also know that the free and rapid interplay of theoretical ideas and experimental results in the public scientific literature maintains the crucial links between these fields.

At the school level both theory and experiments should be undertaken by all students. They should complement one another naturally, as they do in the wider scientific community. The Diploma Programme physics course allows students to develop traditional practical skills and techniques and increase their abilities in the use of mathematics, which is the language of physics. It also allows students to develop interpersonal and digital communication skills which are essential in modern scientific endeavour and are important life-enhancing, transferable skills in their own right.

Alongside the growth in our understanding of the natural world, perhaps the more obvious and relevant result of physics to most of our students is our ability to change the world. This is the technological side of physics, in which physical principles have been applied to construct and alter the material world to suit our needs, and have had a profound influence on the daily lives of all human beings. 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. These concerns have become more prominent as our power over the environment has grown, particularly among young people, for whom the importance of the responsibility of physicists for their own actions is self-evident.

Physics is therefore, above all, a human activity, and students need to be aware of the context in which physicists work. Illuminating its historical development places the knowledge and the process of physics in a context of dynamic change, in contrast to the static context in which physics has sometimes been presented. This can give students insights into the human side of physics: the individuals; their personalities, times and social milieux; their challenges, disappointments and triumphs.

Course Content

The course content consists of three sections:
- The Core
- The Additional Higher Level Material (AHL)
- The Options (OPT): 1 option required

CORE

Topic 1: Measurements and uncertainties

1.1 – Measurements in physics

1.2 – Uncertainties and errors

1.3 – Vectors and scalars

Topic 2: Mechanics

2.1 – Motion

2.2 – Forces

2.3 – Work, energy and power

2.4 – Momentum and impulse

Topic 3: Thermal physics

3.1 – Thermal concepts

3.2 – Modelling a gas

Topic 4: Waves

4.1 – Oscillations

4.2 – Travelling waves

4.3 – Wave characteristics

4.4 – Wave behaviour

4.5 – Standing waves

Topic 5: Electricity and magnetism

5.1 – Electric fields

5.2 – Heating effect of electric currents

5.3 – Electric cells

5.4 – Magnetic effects of electric currents

Topic 6: Circular Motion and Gravitation

6.1 – Circular motion

6.2 – Newton's law of gravitation

Topic 7: Atomic, nuclear and particle physics

7.1 – Discrete energy and radioactivity

7.2 – Nuclear reactions

7.3 – The structure of matter

Topic 8: Energy production

8.1 – Energy sources

8.2 – Thermal energy transfer

ADDITIONAL HIGHER LEVEL (AHL)

Topic 9: Wave phenomena

9.1 – Simple harmonic motion

9.2 – Single-slit diffraction

9.3 – Interference

9.4 – Resolution

9.5 – Doppler effect

Topic 10: Fields

10.1 – Describing fields

10.2 – Fields at work

Topic 11: Electromagnetic induction

11.1 – Electromagnetic induction

11.2 – Power generation and transmission

11.3 – Capacitance

Topic 12: Quantum and nuclear physics

12.1 – The interaction of matter with radiation

12.2 – Nuclear physics

OPTIONS (OPT)

A: Relativity

Core topics
A.1 – The beginnings of relativity

A.2 – Lorentz transformations

A.3 – Spacetime diagrams

Additional higher level topics
A.4 – Relativistic mechanics (HL only)

A.5 – General relativity (HL only)

B: Engineering physics

Core topics
B.1 – Rigid bodies and rotational dynamics

B.2 – Thermodynamics

Additional higher level topics
B.3 – Fluids and fluid dynamics (HL only)

B.4 – Forced vibrations and resonance (HL only)

Option C: Imaging

Core topics
C.1 – Introduction to imaging

C.2 – Imaging instrumentation

C.3 – Fibre optics

Additional higher level topics
C.4 – Medical imaging (HL only)

Option D: Astrophysics

Core topics

D.1 – Stellar quantities

D.2 – Stellar characteristics and stellar evolution

D.3 – Cosmology

Additional higher level topics

D.4 – Stellar processes (HL only)

D.5 – Further cosmology (HL only)

Assessment

Internal Assessment   20%

Both Levels

The internal assessment, worth 20% of the final assessment, consists of one scientific investigation. The individual investigation should cover a topic that is commensurate with the level of the course of study. Student work is internally assessed by the teacher and externally moderated by the IB. The performance in internal assessment at both SL and HL is marked against common assessment criteria, with a total mark out of 24.

The internal assessment task will be one scientific investigation taking about 10 hours and the write-up should be about 6 to 12 pages long. Some of the possible tasks include:
• a hands-on laboratory investigation
• using a spreadsheet for analysis and modelling
• extracting data from a database and analysing it graphically
• producing a hybrid of spreadsheet/database work with a traditional hands-on investigation
• using a simulation provided it is interactive and open-ended

This component is assessed internally by the subject teacher, who submits a specified number of samples at the end of the course for external moderation.

External Examination   80%

Paper 1   1 hour   20%
40 multiple-choice questions on core and AHL

Paper 2   2 hours 15 minutes   36%
Short-answer and extended-response questions on the core and AHL material.

Paper 3   1 hour 15 minutes   24%
This paper will have questions on core, AHL and option material.

• Section A: one data-based question and several short-answer questions on experimental work.

• Section B: short-answer and extended-response questions from one option.

Required Prior Mathematical Knowledge for Physics

All Diploma Programme physics students should be able to:

- perform the basic arithmetic functions: addition, subtraction, multiplication and division

- carry out calculations involving means, decimals, fractions, percentages, ratios, approximations and reciprocals

- carry out manipulations with trigonometric functions

- carry out manipulations with logarithmic and exponential functions (HL only)

- use standard notation

- use direct and inverse proportion

- solve simple algebraic equations

- solve linear simultaneous equations

- plot graphs (with suitable scales and axes) including two variables that show linear and non-linear relationships

- interpret graphs, including the significance of gradients, changes in gradients, intercepts and areas

- draw lines (either curves or linear) of best fit on a scatter plot graph

- on a best-fit linear graph, construct linear lines of maximum and minimum gradients with relative

- accuracy (by eye) taking into account all uncertainty bars

- interpret data presented in various forms (for example, bar charts, histograms and pie charts)

- represent arithmetic mean using x-bar notation (for example, x)

- express uncertainties to one or two significant figures, with justification.

For queries specifically concerned with the group 4 science programmes above, contact Mr. Kwaku Boateng, Head of Science Department, SOS-HGIC.

Computer Science – Higher Level and Standard Level

Nature of the subject

Computer science requires an understanding of the fundamental concepts of computational thinking as well as knowledge of how computers and other digital devices operate.
The Diploma Programme computer science course is engaging, accessible, inspiring and rigorous. It has the following characteristics:

• draws on a wide spectrum of knowledge
• enables and empowers innovation, exploration and the acquisition of further knowledge
• interacts with and influences cultures, society and how individuals and societies behave
• raises ethical issues
• is underpinned by computational thinking.
Computational thinking involves the ability to:
• think procedurally, logically, concurrently, abstractly, recursively and think ahead
• utilize an experimental and inquiry-based approach to problem-solving
• develop algorithms and express them clearly
• appreciate how theoretical and practical limitations affect the extent to which problems can be solved computationally.

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.

Computer science has links with subjects outside of group 4, notably information technology in a global society (ITGS), but it should be noted that there are clear differences between the subjects.

Prior Learning

Past experience shows that students will be able to study computer science at SL successfully with no background in, or previous knowledge of, computer science. Their approach to study, characterized by specific IB learner profile attributes—inquirers, thinkers and communicators—will be significant here. Students who have undertaken the IB Middle Years Programme (MYP) or studied a similar course prior to commencing the IB Diploma Programme would also be well prepared.
The study of computer science at HL demands a higher level of problem-solving skills and the ability to understand and manipulate abstract concepts. Although no previous knowledge of computer science is required, some exposure to programming is desirable.

Course Content

Core syllabus content

SL/HL core
The topics that must be studied, including some practical work, are:

- Topic 1: System fundamentals (20 hours)
- Topic 2: Computer organization (6 hours)
- Topic 3: Networks (9 hours)
- Topic 4: Computational thinking, problem-solving and programming (45 hours)

HL extension
The topics that must be studied, including some practical work, are:

- Topic 5: Abstract data structures (23 hours)
- Topic 6: Resource management (8 hours)
- Topic 7: Control (14 hours)

Case study
Additional subject content introduced by the annually issued case study

Option: SL/HL core with 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)

Assessment

Internal Assessment   35%

This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.

Solution (30 hours)
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). (34 marks)

External Assessment   65%

Paper 1 (1 hour 30 minutes)   45%
Paper 1 is an examination paper consisting of **two compulsory sections**.
- Section A (30 minutes approximately) consists of several **compulsory** short answer questions. The maximum mark for this section is 25.
- Section B (60 minutes approximately) consists of three **compulsory** structured questions. The maximum mark for this section is 45. (70 marks)

Paper 2 (1 hour)   *25%*
Paper 2 is an examination paper linked to the option studied.
The paper consists of between two and five **compulsory** questions. (45 marks)

Calculators: The use of calculators is **not** permitted in any computer science examination.

For queries specifically concerned with the Computer Science programme, contact:
Mr. Prosper Habada, Head of IT Department, SOS-HGIC.

ITGS	Computer Science
In ITGS, people are central to the study of the subject. This is underpinned by a secure knowledge of the technology within the specified IT system. This technical knowledge ensures that the discussion of the effects of a new IT system on people will not be superficial.	In computer science, the emphasis is on a detailed knowledge of the computer system, followed by an awareness of its effects on people.
ITGS considers the internal workings of an IT system only to the extent of how it contributes to the understanding of a social impact or ethical issue.	Computer science emphasizes a detailed understanding of the logic and internal workings of a system.
ITGS is concerned with the development of IT systems, with particular emphasis on the effects on clients and end-users.	Computer science is concerned with algorithmic thinking and the ways in which a real-world problem can be decomposed in order to construct a working computable solution.
ITGS looks to implement a new IT system based on the use of currently available software.	Computer science looks to develop a new system using existing building blocks or by creating a totally novel approach as appropriate. This may involve the writing of new code in an appropriate programming environment.
ITGS is concerned with activities such as choosing and using a spreadsheet, finding ways of using it more effectively, and educating other people about its use. It is concerned with the effects of using the software and obtaining reliable results that are beneficial to all who are affected by it.	Computer science examines real-world problems and produces algorithms from which useful software can be derived. The computer scientist creates the initial concepts and designs to produce appropriate and novel solutions to problems or by adapting existing solutions.

The main difference between ITGS and computer science relates to the focus of study. ITGS is about how people are affected by systems already in use and those planned for the future. Computer science looks first at the technology and then later at its interaction with those affected by it. Some degree of overlap between the two subjects is intentional, inevitable and desirable.

GROUP 5: MATHEMATICS

Mathematics has been described as the study of structure, order and relation that has evolved from the practices of counting, measuring and describing objects. Mathematics provides a unique language to describe, explore and communicate the nature of the world we live in as well as being a constantly building body of knowledge and truth in itself that is distinctive in its certainty. These two aspects of mathematics, a discipline that is studied for its intrinsic pleasure and a means to explore and understand the world we live in, are both separate yet closely linked.

Mathematics is driven by abstract concepts and generalization. This mathematics is drawn out of ideas, and develops through linking these ideas and developing new ones. These mathematical ideas may have no immediate practical application. Doing such mathematics is about digging deeper to increase mathematical knowledge and truth. The new knowledge is presented in the form of theorems that have been built from axioms and logical mathematical arguments and a theorem is only accepted as true when it has been proven. The body of knowledge that makes up mathematics is not fixed; it has grown during human history and is growing at an increasing rate.

The side of mathematics that is based on describing our world and solving practical problems is often carried out in the context of another area of study. Mathematics is used in a diverse range of disciplines as both a language and a tool to explore the universe; alongside this its applications include analyzing trends, making predictions, quantifying risk, exploring relationships and interdependence.

While these two different facets of mathematics may seem separate, they are often deeply connected. When mathematics is developed, history has taught us that a seemingly obscure, abstract mathematical theorem or fact may in time be highly significant. On the other hand, much mathematics is developed in response to the needs of other disciplines.

The two mathematics courses available to Diploma Programme (DP) students express both the differences that exist in mathematics described above and the connections between them. These two courses might approach mathematics from different perspectives, but they are connected by the same mathematical body of knowledge, ways of thinking and approaches to problems. The differences in the courses may also be related to the types of tools, for instance technology, that are used to solve abstract or practical problems. The next section will describe in more detail the two available courses.

> **Key Concepts in Mathematics: approximation, quantity, generalization, equivalence, space, systems, relationships, representation, modelling, validity, change, pattern**

Summary of courses available

Individual students have different needs, aspirations, interests and abilities. For this reason there are two different subjects in mathematics, each available at SL and HL These courses are designed for different types of students: those who wish to study mathematics as a subject in its own right or to pursue their interests in areas related to mathematics, and those who wish to gain understanding and competence in how mathematics relates to the real world and to other subjects. Each course is designed to meet the needs of a particular group of students. Mathematics: analysis and approaches and Mathematics: applications and interpretation are both offered at SL and HL. Therefore, great care should be taken to select the course and level that is most appropriate for an individual student.

In making this selection, individual students should be advised to take into account the following factors:

• their own abilities in mathematics and the type of mathematics in which they can be successful

• their own interest in mathematics and those particular areas of the subject that may hold the most interest for them

• their other choices of subjects within the framework of the DP

• their academic plans, in particular the subjects they wish to study in the future

• their choice of career.

Teachers are expected to assist with the selection process and to offer advice to students.

The mathematics model
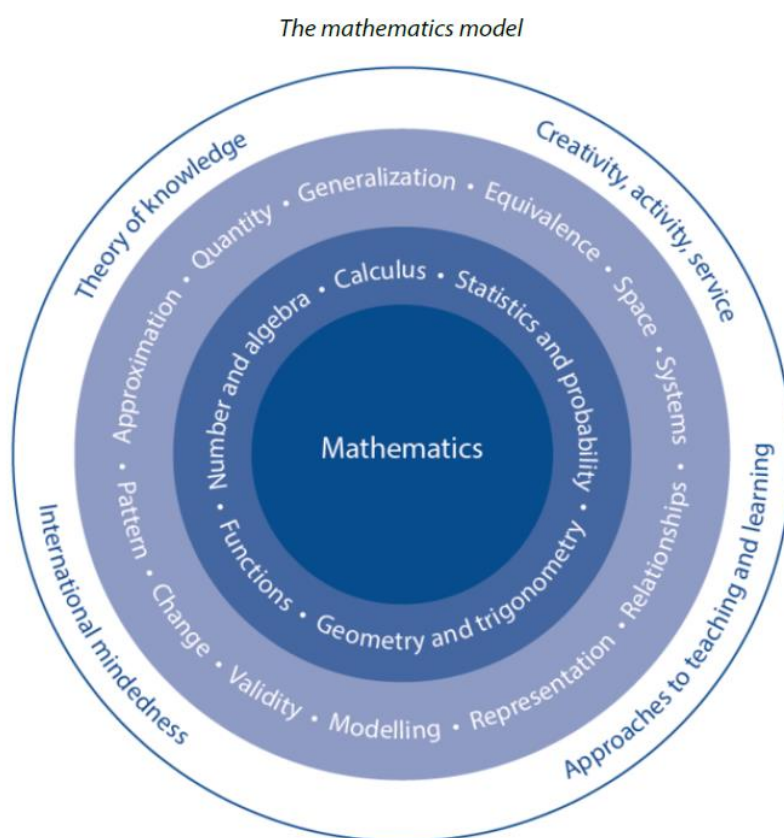
Mathematics: analysis and approaches

This course recognizes the need for analytical expertise in a world where innovation is increasingly dependent on a deep understanding of mathematics. This course includes topics that are both traditionally part of a pre-university mathematics course (for example, functions, trigonometry, calculus) as well as topics that are amenable to investigation, conjecture and proof, for instance the study of sequences and series at both SL and HL, and proof by induction at HL.

The course allows the use of technology, as fluency in relevant mathematical software and hand-held technology is important regardless of choice of course. However, Mathematics: analysis and approaches has a strong emphasis on the ability to construct, communicate and justify correct mathematical arguments.

Mathematics: analysis and approaches: Distinction between SL and HL

Students who choose Mathematics: analysis and approaches at SL or HL should be comfortable in the manipulation of algebraic expressions and enjoy the recognition of patterns and understand the mathematical generalization of these patterns. Students who wish to take Mathematics: analysis and approaches at higher level will have strong algebraic skills and the ability to understand simple proof. They will be students who enjoy spending time with problems and get pleasure and satisfaction from solving challenging problems.

Syllabus component	Suggested teaching hours	
	SL	HL
Topic 1—Number and algebra	19	39
Topic 2—Functions	21	32
Topic 3— Geometry and trigonometry	25	51
Topic 4—Statistics and probability	27	33
Topic 5 —Calculus	28	55
The toolkit and the mathematical exploration Investigative, problem-solving and modelling skills development leading to an individual exploration. The exploration is a piece of written work that involves investigating an area of mathematics.	30	30
Total teaching hours	**150**	**240**

Mathematics: applications and interpretation

This course recognizes the increasing role that mathematics and technology play in a diverse range of fields in a data-rich world. As such, it emphasizes the meaning of mathematics in context by focusing on topics that are often used as applications or in mathematical modelling. To give this understanding a firm base, this course also includes topics that are traditionally part of a pre-university mathematics course such as calculus and statistics.
The course makes extensive use of technology to allow students to explore and construct mathematical models. Mathematics: applications and interpretation will develop mathematical thinking, often in the context of a practical problem and using technology to justify conjectures.

Mathematics: applications and interpretation: Distinction between SL and HL

Students who choose Mathematics: applications and interpretation at SL or HL should enjoy seeing mathematics used in real-world contexts and to solve real-world problems. Students who wish to take Mathematics: applications and interpretation at higher level will have good algebraic skills and experience of solving real-world problems. They will be students who get pleasure and satisfaction when exploring challenging problems and who are comfortable to undertake this exploration using technology.

This course caters for students who already possess knowledge of basic mathematical concepts, and who are equipped with the skills needed to apply simple mathematical techniques correctly. The majority of these students will expect to need a sound mathematical background as they prepare for future studies in subjects such as chemistry, economics, psychology and business administration.

Syllabus component	Suggested teaching hours—SL	Suggested teaching hours—HL
Topic 1—Number and algebra	16	29
Topic 2—Functions	31	42
Topic 3—Geometry and trigonometry	18	46
Topic 4—Statistics and probability	36	52
Topic 5—Calculus	19	41
The "toolkit" and Mathematical exploration Investigative, problem-solving and modelling skills development leading to an individual exploration. The exploration is a piece of written work that involves investigating an area of mathematics.	30	30
Total teaching hours	150	240

Mathematics: analysis and approaches

HL Assessment

Assessment component	Weighting
External assessment (5 hours)	**80%**
Paper 1 (120 minutes)	
No technology allowed. (110 marks)	**30%**
Section A	
Compulsory short-response questions based on the syllabus.	
Section B	
Compulsory extended-response questions based on the syllabus.	
Paper 2 (120 minutes)	**30%**
Technology required. (110 marks)	**20%**
Section A	
Compulsory short-response questions based on the syllabus.	
Section B	
Compulsory extended-response questions based on the syllabus.	
Paper 3 (60 minutes)	
Technology required. (55 marks)	
Two compulsory extended response problem-solving questions.	
Internal assessment	**20%**
This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.	
Mathematical exploration	
Internal assessment in mathematics is an individual exploration. This is a piece of written work that involves investigating an area of mathematics. (20 marks)	

Assessment component	Weighting
External assessment (3 hours)	**80%**
Paper 1 (90 minutes)	
No technology allowed. (80 marks)	**40%**
Section A	
Compulsory short-response questions based on the syllabus.	
Section B	
Compulsory extended-response questions based on the syllabus.	
Paper 2 (90 minutes)	**40%**
Technology required. (80 marks)	
Section A	
Compulsory short-response questions based on the syllabus.	
Section B	
Compulsory extended-response questions based on the syllabus	
Internal assessment	**20%**
This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.	
Mathematical exploration	
Internal assessment in mathematics is an individual exploration. This is a piece of written work that involves investigating an area of mathematics. (20 marks)	

Mathematics: applications and interpretation

HL Assessment

Assessment component	Weighting
External assessment (5 hours)	**80%**
Paper 1 (120 minutes)	**30%**
Technology required. (110 marks)	
Compulsory short-response questions based on the syllabus.	
Paper 2 (120 minutes)	**30%**
Technology required. (110 marks)	
Compulsory extended-response questions based on the syllabus.	
Paper 3 (60 minutes)	**20%**
Technology required. (55 marks)	
Two cumpulsory extended response problem-solving questions.	
Internal assessment	**20%**
This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.	
Mathematical exploration	
Internal assessment in mathematics is an individual exploration. This is a piece of written work that involves investigating an area of mathematics. (20 marks)	

SL Assessment

Assessment component	Weighting
External assessment (3 hours)	**80%**
Paper 1 (90 minutes)	**40%**
Technology required. (80 marks)	
Compulsory short-response questions based on the syllabus. (80 marks)	
Paper 2 (90 minutes)	**40%**
Technology required. (80 marks)	
Compulsory extended-response questions based on the syllabus. (80 marks)	
Internal assessment	**20%**
This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.	
Mathematical exploration	
Internal assessment in mathematics is an individual exploration. This is a piece of written work that involves investigating an area of mathematics. (20 marks)	

For queries specifically concerned with the Mathematics programmes, contact:
Mr. Mark Carter, Head of Mathematics Department, SOS-HGIC.

GROUP 6

Visual Arts – Higher Level and Standard Level

Nature of the Subject

The visual arts are an integral part of everyday life, permeating all levels of human creativity, expression, communication and understanding. They range from traditional forms embedded in local and wider communities, societies and cultures, to the varied and divergent practices associated with new, emerging and contemporary forms of visual language. They may have sociopolitical impact as well as ritual, spiritual, decorative and functional value; they can be persuasive and subversive in some instances, enlightening and uplifting in others. We celebrate the visual arts not only in the way we create images and objects, but also in the way we appreciate, enjoy, respect and respond to the practices of art-making by others from around the world. Theories and practices in visual arts are dynamic and ever-changing, and connect many areas of knowledge and human experience through individual and collaborative exploration, creative production and critical interpretation.

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

Course Content

Core areas
The visual arts core syllabus at SL and HL consists of three equal interrelated areas as shown below:
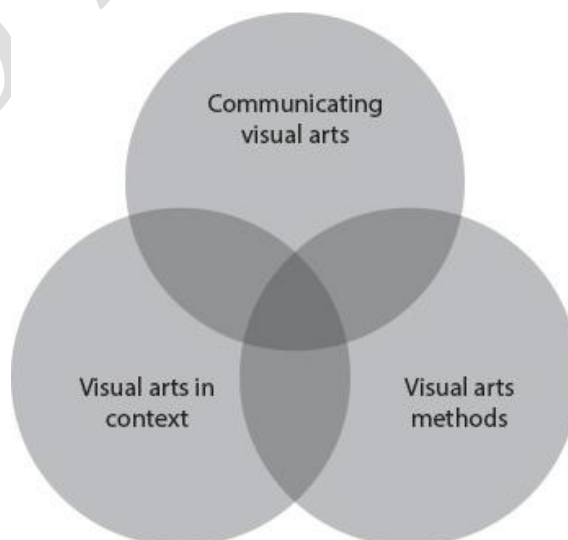
These core areas, which have been designed to fully interlink with the assessment tasks, must be central to the planning of the taught course that is designed and delivered by the teacher. Students are required to understand the relationship between these areas and how each area informs and impacts their work in visual arts.

Visual arts in context

The visual arts in context part of the syllabus provides a lens through which students are encouraged to explore perspectives, theories and cultures that inform and influence visual arts practice. Students should be able to research, understand and appreciate a variety of contexts and traditions and be able to identify links between them.

Through the visual arts in context area, students will:

• be informed about the wider world of visual arts and they will begin to understand and appreciate the cultural contexts within which they produce their own works

• observe the conventions and techniques of the artworks they investigate, thinking critically and experimenting with techniques, and identifying possible uses within their own art-making practice

• investigate work from a variety of cultural contexts and develop increasingly sophisticated, informed responses to work they have seen and experienced.

Visual arts methods

The visual arts methods part of the syllabus addresses ways of making artwork through the exploration and acquisition of skills, techniques and processes, and through engagement with a variety of media and methods.

Through the visual arts methods area, students will:

• understand and appreciate that a diverse range of media, processes, techniques and skills are required in the making of visual arts, and how and why these have evolved

• engage with the work of others in order to understand the complexities associated with different artmaking methods and use this inquiry to inspire their own experimentation and art-making practice

• understand how a body of work can communicate meaning and purpose for different audiences.

Communicating visual arts

The communicating visual arts part of the syllabus involves students investigating, understanding and applying the processes involved in selecting work for exhibition and public display. It engages students in making decisions about the selection of their own work.

Through the communicating visual arts area, students will:

• understand the many ways in which visual arts can communicate and appreciate that presentation constructs meaning and may influence the way in which individual works are valued and understood

• produce a body of artwork through a process of reflection and evaluation and select artworks for exhibition, articulating the reasoning behind their choices and identifying the ways in which selected works are connected

• explore the role of the curator; acknowledging that the concept of an exhibition is wide ranging and encompasses many variables, but most importantly, the potential impact on audiences and viewers.

Mapping the course

Students are required to investigate the core syllabus areas through exploration of the following practices:

• theoretical practice

• art-making practice
• curatorial practice.

The visual arts journal

Throughout the course students at both SL and HL are required to maintain a visual arts journal. This is their own record of the two years of study and should be used to document:
• the development of art-making skills and techniques
• experiments with media and technologies
• personal reflections
• their responses to first-hand observations
• creative ideas for exploration and development
• their evaluations of art practices and art-making experiences
• their responses to diverse stimuli and to artists and their works
• detailed evaluations and critical analysis
• records of valued feedback received
• challenges they have faced and their achievements.

Assessment

Higher Level

Part 1: Comparative study   20%

Students at HL analyse and compare different artworks by different artists. This independent critical and contextual investigation explores artworks, objects and artefacts from differing cultural contexts.
• HL students submit 10–15 screens which examine and compare at least three artworks, at least two of which need to be by different artists. The works selected for comparison and analysis should come from contrasting contexts (local, national, international and/or intercultural).
• HL students submit 3–5 screens which analyse the extent to which their work and practices have been influenced by the art and artists examined.
• HL students submit a list of sources used.

Part 2: Process portfolio   40%

Students at HL submit carefully selected materials which evidence their experimentation, exploration, manipulation and refinement of a variety of visual arts activities during the two-year course.
• HL students submit 13–25 screens which evidence their sustained experimentation, exploration, manipulation and refinement of a variety of artmaking activities. For HL students the submitted work must have been created in at least **three** art-making forms, selected from a minimum of two columns of the art-making forms table.

Internal assessment: part 3

This task is internally assessed by the teacher and externally moderated by the IB at the end of the course.

Part 3: Exhibition   40%

Students at HL submit for assessment a selection of resolved artworks from their exhibition. The selected pieces should show evidence of their technical accomplishment during the visual

arts course and an understanding of the use of materials, ideas and practices appropriate to visual communication.

• HL students submit a curatorial rationale that does not exceed 700 words.

• HL students submit 8–11 artworks.

• HL students submit exhibition text (stating the title, medium, size and intention) for each selected artwork.

HL students may submit two photographs of their overall exhibition. These exhibition photographs provide an understanding of the context of the exhibition and the size and scope of the works. While the photographs will not be used to assess individual artworks, they may give the moderator insight into how a candidate has considered the overall experience of the viewer in their exhibition.

Standard Level

External Assessment: parts 1 and 2

Part 1: Comparative study   20%

Students at SL analyse and compare different artworks by different artists. This independent critical and contextual investigation explores artworks, objects and artifacts from differing cultural contexts.

• SL students submit 10–15 screens which examine and compare at least three artworks, at least two of which should be by different artists. The work selected for comparison and analysis should come from contrasting contexts (local, national, international and/or intercultural).

• SL students submit a list of sources used.

Part 2: Process portfolio   40%

Students at SL submit carefully selected materials which evidence their experimentation, exploration, manipulation and refinement of a variety of visual arts activities during the two-year course.

• SL students submit 9–18 screens which evidence their sustained experimentation, exploration, manipulation and refinement of a variety of artmaking activities. For SL students the submitted work must be in at least **two** art-making forms, each from separate columns of the art-making forms table.

Internal assessment: part 3

This task is internally assessed by the teacher and externally moderated by the IB at the end of the course.

Part 3: Exhibition   40%

Students at SL submit for assessment a selection of resolved artworks from their exhibition. The selected pieces should show evidence of their technical accomplishment during the visual arts course and an understanding of the use of materials, ideas and practices appropriate to visual communication.

• SL students submit a curatorial rationale that does not exceed 400 words.

• SL students submit 4–7 artworks.

• SL students submit exhibition text (stating the title, medium, size and intention) for each selected artwork.

SL students may submit two photographs of their overall exhibition. These exhibition photographs provide an understanding of the context of the exhibition and the size and scope of the works. While the photographs will not be used to assess individual artworks, they may

give the moderator insight into how a candidate has considered the overall experience of the viewer in their exhibition.

Theatre – Higher Level and Standard Level

Nature of the Subject

Theatre is a dynamic, collaborative and live art form. It is a practical subject that encourages discovery through experimentation, the taking of risks and the presentation of ideas to others. It results in the development of both theatre and life skills; the building of confidence, creativity and working collaboratively.

The Theatre course is a multifaceted theatre-making course of study. It gives students the opportunity to make theatre as creators, designers, directors and performers. It emphasizes the importance of working both individually and collaboratively as part of an ensemble. It offers the opportunity to engage actively in the creative process, transforming ideas into action as inquisitive and productive artists.

Students experience the course from contrasting artistic perspectives. They learn to apply research and theory to inform and to contextualize their work. The theatre course encourages students to appreciate that through the processes of researching, creating, preparing, presenting and critically reflecting on theatre— as participants and audience members—they gain a richer understanding of themselves, their community and the world.

Through the study of theatre, students become aware of their own personal and cultural perspectives, developing an appreciation of the diversity of theatre practices, their processes and their modes of presentation. It enables students to discover and engage with different forms of theatre across time, place and culture and promotes international-mindedness.

Course Content

Core Areas

The theatre syllabus at SL and HL consists of three equal, interrelated areas:
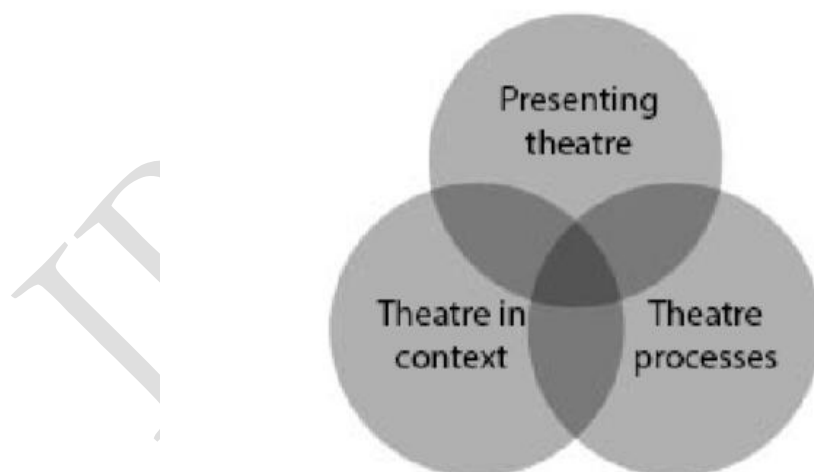
These core areas, which have been designed to fully interlink with the assessment tasks, must be central to the planning and designing of the taught programme developed and delivered by the teacher. Students are required to understand the relationship between these areas and how each area informs and impacts their work in theatre.

Students are required to approach these areas from the perspectives of each of the following specialist theatre roles: creator, designer, director, performer.

		AS PART OF THE CORE SYLLABUS, STUDENTS WILL BE EXPECTED TO: (from the perspectives of creator, designer, director, performer and spectator)		
		THEATRE IN CONTEXT	THEATRE PROCESSES	PRESENTING THEATRE
HL only	Creating theatre based on theatre theory	At HL, students research and examine the various contexts of at least one theatre theorist.	At HL, students practically explore at least one theatre theorist collaboratively and engage with the process of creating a piece of theatre based on their theory.	At HL, students create, present and evaluate at least one theatre piece based on an aspect(s) of a theatre theorist's work they have explored.
SL and HL	Working with play texts	Students research and examine the various contexts of at least one published play text and reflect on live theatre moments they have experienced as spectators.	Students take part in the practical exploration of at least two contrasting published play texts and engage with the process of transforming a play text into action.	Students direct at least one scene or section from one published play text which is presented to others.
SL and HL	Examining world theatre traditions	Students research and examine the various contexts of at least one world theatre tradition.	Students practically examine the performance conventions of at least one world theatre tradition and apply this to the staging of a moment of theatre.	Students present a moment of theatre to others which demonstrates the performance convention(s) of at least one world theatre tradition.

		THEATRE IN CONTEXT	THEATRE PROCESSES	PRESENTING THEATRE
SL and HL	Collaborat- ively creating original theatre	Students reflect on their own personal approaches, interests and skills in theatre. They research and examine at least one starting point and the approaches employed by one appropriate professional theatre company, and consider how this might influence their own personal approaches.	Students respond to at least one starting point and engage with the process of transforming it collaboratively into an original piece of theatre.	Students participate in at least one production of a collaboratively created piece of original theatre, created from a starting point, which is presented to others.
SL and HL	Theatre journal	Students keep a theatre journal throughout the two-year theatre course which charts their development and their experiences of theatre as a creator, designer, director, performer and spectator.		

Assessment

<u>**Internal Assessment**</u> <u>**25%**</u>

Task 4: Collaborative project (SL and HL). Students at SL and HL collaboratively create and present an original piece of theatre (lasting 13–15 minutes) for and to a specified target audience, created from a starting point of their choice.

<u>**External assessment**</u> <u>**75%**</u>

Task 1: 35%
Solo theatre piece (HL only). Students at HL research a theatre theorist they have not previously studied, identify an aspect(s) of their theory and create and present a solo theatre piece (4–8 minutes) based on this aspect(s) of theory.

Task 2: 20%
Director's notebook (SL and HL). Students at SL and HL choose a published play text they have not previously studied and develop ideas regarding how the entire play could be staged for an audience.

Task 3: 20%
Research presentation (SL and HL). Students at SL and HL plan and deliver an individual presentation (15 minutes maximum) to their peers in which they present and physically demonstrate their research into a convention of a theatre tradition they have not previously studied

Music – Higher Level and Standard Level

Nature of the Subject

Music is an essential part of the human experience and a unique mode of creativity, expression and communication. Music is both functional and meaningful, and its vitality and complexity enriches our lives. Though music is rooted in specific societies and cultures, it also transcends—and often connects—them. Music not only offers a way of understanding the world, but also a means by which we can express and share our understanding of it with others.

Music's many rich histories continue to evolve through individual and collaborative contributions. In the past, as in our contemporary and increasingly digital world, music responds to, and is shaped by, new and emerging technologies and approaches.

The study of music encourages inquiry into creative practices and performance processes. Music study develops listening, creative and analytical skills, as well as encouraging cultural understanding and international-mindedness. In this way, music is a catalyst for expanding critical thinking—a crucial life skill. When we understand others and ourselves through music, we are empowered to make positive and effective change in the world.

In this course, students and teachers engage in a journey of imagination and discovery through partnership and collaboration. Students develop and affirm their unique musical identities while expanding and refining their musicianship.

Throughout the course, students are encouraged to explore music in varied and sometimes unfamiliar contexts. Additionally, by experimenting with music, students gain hands-on experience while honing musical skills. Through realizing and presenting samples of their musical work with others, students also learn to communicate critical and artistic intentions and purpose.

As students develop as young musicians, the course challenges them to engage practically with music as researchers, performers and creators, and to be driven by their unique passions and interests while also broadening their musical and artistic perspectives.

Course Content

This practical course fosters students' musicianship and shapes their musical identities as researchers, creators and performers. The course defines musicianship as comprising three, intrinsically connected aspects. 1. Knowledge and understanding of diverse musical material 2. Engagement with the musical processes of exploring, experimenting and presenting 3. Competencies and skill in the musical roles of researchers, creators and performers.

The course encourages the acquisition of knowledge and understanding of diverse musical material, and development of musical competencies and related musical skills in the roles of researchers, creators and performers through the practical processes of exploring, experimenting and presenting. Throughout the music course, students at SL and HL:

• engage with diverse musical material
• understand and practise three musical processes
• develop skills and competencies in three musical roles.

Musical roles		Researcher	Creator	Performer
Musical processes	**Exploring music in context**	☒	☒	☒
	Experimenting with music	☒	☒	☒
	Presenting music	☒	☒	☒
The contemporary music maker (HL only) Students at HL plan and create a music project that is rooted in the learning of the course and inspired by real-life practices of music-making.				

This course introduces students to a wide range of music from familiar and unfamiliar contexts that expands their horizons and provides new and exciting musical stimuli for their own work. To achieve this, the course uses a framework of areas of inquiry and contexts. Students broaden their knowledge by engaging with diverse musical material from personal, local and global contexts. They develop their musical identities by considering music and its functions in four areas of inquiry. Specific musical works are not prescribed, allowing teachers and students flexibility depending on their background. The course framework is intended to be used creatively to stimulate both students' and teachers' imaginations. Students will engage with diverse musical material through four areas of inquiry. Through the exploration and inquiry into personal, local and global contexts, students engage with both familiar and unfamiliar music.

Syllabus component	Teaching hours	
	SL	HL
Exploring music in context When exploring music in context, students will learn how to engage with a **diverse** range of music that will broaden their musical horizons and provide stimuli to expand their own music-making. Students will demonstrate **diversity** and **breadth** in their exploration by engaging with music from the areas of inquiry in **personal**, **local** and **global contexts**.	45	45
Experimenting with music When experimenting with music, students connect theoretical studies to practical work and gain a deeper understanding of the music they engage with. Through this theoretical and practical work as researchers, creators and performers, students will learn to experiment with a range of **musical material** and stimuli from the areas of inquiry across local and global contexts.	45	45
Presenting music When presenting music, students learn to practise and prepare finished pieces that will be performed or presented to an audience. In working towards completed musical works, students expand their musical identity, demonstrate their level of musicianship, and learn to share and communicate their music as researchers, creators and performers.	60	60
The contemporary music maker (HL only) Music at higher level (HL) builds on the learning of musical competencies and challenges students to engage with the musical processes in settings of contemporary music-making. For the HL component, students plan and collaboratively create a project that draws on the competencies, skills and processes in all of the musical roles of the music course, and is inspired by real-life practices of music-making.	n/a	90
Total teaching hours	**150**	**240**

Assessment

	External/Internal	SL	HL

Exploring music in context
 	
Students select samples of their work for a portfolio submission (maximum **2,400 words**). Student submit:
 	
a. written work demonstrating engagement with, and understanding of, **diverse** musical material
 	
b. practical exercises:
 	
   • **creating**: one creating exercise (score maximum **32 bars** and/or audio **1 minute** as appropriate to **style**)
 	
   • performing: one **performed adaptation** of music from a **local** or **global context** for the student's own **instrument** (maximum **2 minutes**)
 	
c. supporting audio material (not assessed).
	External	30%	20%

Experimenting with music
 	
Students submit an experimentation report with evidence of their musical processes in creating and performing in two areas of inquiry in a local and/or global context. The report provides a **rationale** and **commentary** for each process. Students submit:
 	
a. a written experimentation report that supports the experimentation (maximum **1,500 words**)
 	
b. practical musical evidence of the experimentation process
 	
   • three related **excerpts** of creating (total maximum **5 minutes**)
 	
   • three related excerpts of performing (total maximum **5 minutes**)
	Internal	30%	20%

Presenting music
 	
Students submit a collection of works demonstrating engagement with diverse musical material from four areas of inquiry. The submission contains:
 	
a. Presenting as a researcher
 	
   • programme notes (maximum **600 words**)
 	
b. Presenting as a creator
 	
   • composition and/or **improvisation** (maximum **6 minutes**)
 	
c. Presenting as a performer
 	
   • solo and/or **ensemble** (maximum **12 minutes**)
 	
   • excerpts, where applicable (maximum **2 minutes**)
	External	40%	30%

The contemporary music-maker (HL only)	Internal		30%
Students submit a continuous **multimedia presentation** documenting their **real-life project**. Students submit multimedia presentation (maximum **15 minutes**), evidencing: a. the project proposal b. the process and evaluation c. the realized project, or curated selections of it.			
		100%	100%

For queries specifically concerned with courses in group 6, contact:
Mr. Edward Adiamah, Head of Arts Department, SOS-HGIC.

References and Contacts

For more information on the International Baccalaureate, visit the website at:

www.ibo.org

For further background information on the history of the IB, read:

Peterson, A. D. C. (1987), <u>Schools Across Frontiers</u>, Open Court

For any further queries about the IB Diploma Programme at SOS-HGIC, contact:

Julian H. Kitching, Director of Studies, SOS-HGIC
e-mail: directorofstudies@soshgic.edu.gh

Julian H. Kitching
Director of Studies
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