



The IB Diploma Programme at Karinthy Frigyes Gimnázium

Curriculum guide 2015

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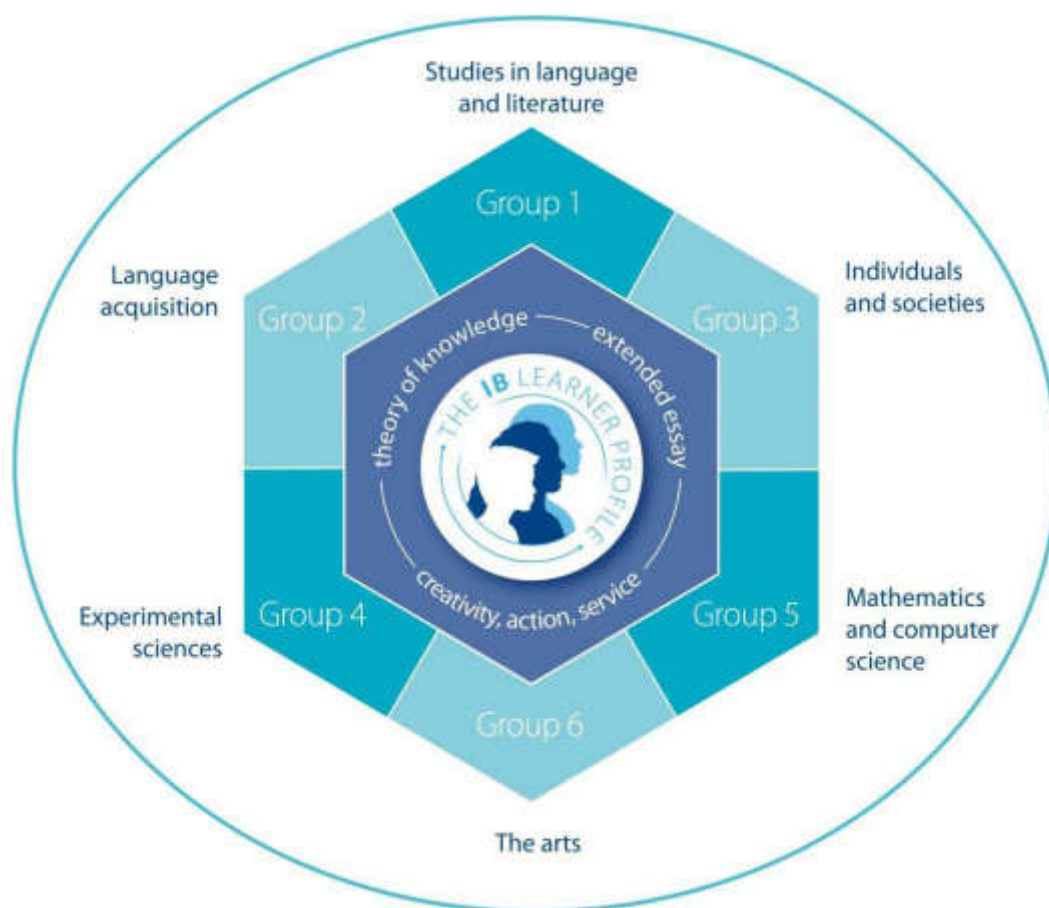
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THE IB DIPLOMA PROGRAMME

The Diploma Programme is a rigorous pre-university course of study designed for students in the 16 to 19 age range. It is a broad-based two-year course that aims to encourage students to be knowledgeable and inquiring, but also caring and compassionate. There is a strong emphasis on encouraging students to develop intercultural understanding, open-mindedness, and the attitudes necessary for them to respect and evaluate a range of points of view.

The Diploma Programme model

The course is presented as six academic areas enclosing a central core (see figure 1). It encourages the concurrent study of a broad range of academic areas. Students study: two modern languages (or a modern language and a classical language); a humanities or social science subject; an experimental science; mathematics; one of the creative arts. It is this comprehensive range of subjects that makes the Diploma Programme a demanding course of study designed to prepare students effectively for university entrance. In each of the academic areas students have flexibility in making their choices, which means they can choose subjects that particularly interest them and that they may wish to study further at university.



Students are required to choose one subject from each of the six academic areas, although they can, instead of an arts subject, choose two subjects from another area. Normally, three subjects (and not more than four) are taken at higher level (HL), and the others are taken at standard level (SL). The IB recommends 240 teaching hours for HL subjects and 150 hours for SL. Subjects at HL are studied in greater depth and breadth than at SL.

At both levels, many skills are developed, especially those of critical thinking and analysis. At the end of the course, students' abilities are measured by means of external assessment. However, the Diploma Programme as a whole is much more than the sum of its parts. Besides the subjects-specific knowledge of the chosen subjects, the breadth of the addressed knowledge, and the core requirements of the Programme allows students to prepare thoroughly for their further study.

THE CORE

All Diploma Programme students participate in the three elements of the IB Diploma Programme core:

- The theory of knowledge (TOK) course encourages students to think about the nature of knowledge, to reflect on the process of learning in all their subjects, and to see and understand the connections between them.
- The extended essay, a substantial piece of academic writing of up to 4,000 words, enables students to investigate a topic of special interest that they have chosen themselves; this encourages the development of independent research skills expected at university.
- CAS involves students in a range of enjoyable and significant experiences, as well as a CAS project.

The three elements of the Diploma Programme core (TOK, CAS and the extended essay) were introduced by the original curriculum designers of the Diploma Programme as a way to educate the whole person. The core consists of three separate elements, but these are linked to each other and also to the academic subjects that surround them. All three elements of the core should be grounded in three coherent aims:

- support, and be supported by, the academic disciplines
- foster international-mindedness
- develop self-awareness and a sense of identity.

The Creativity, Action, Service element must be completed but no points are awarded for it in the Diploma. The extended essay and Theory of Knowledge components are awarded grades A to E, with A being the highest grade and E being the lowest. These grades are then combined according to the following table, and up to three Core points can be awarded.

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

Thus the maximum possible Diploma point score of 45 points is made up of $6 \times 7 = 42$ points for 6 subjects and 3 points for the IB Diploma Programme's Core.

Creativity, Action, Service (CAS)

The CAS programme aims to develop students who:

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

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

- **Creativity**—exploring and extending ideas leading to an original or interpretive product or performance
- **Activity**—physical exertion contributing to a healthy lifestyle
- **Service**—collaborative and reciprocal engagement with the community in response to an authentic need

Successful completion of CAS is a requirement for the award of the IB Diploma. While not formally assessed, a student who fails to complete the requirements is not eligible to be awarded a Diploma.

The CAS programme formally begins at the start of the Diploma Programme and continues regularly, ideally on a weekly basis, for at least **18 months** with a reasonable balance between creativity, activity, and service. It stresses the importance of life outside the world of scholarship, balancing the load of the demanding school curriculum. Participation in CAS encourages students to share their energies and special talents while developing awareness, concern and the ability to work cooperatively with others. The Diploma goal of educating the whole person and fostering more caring and socially responsible attitudes comes alive when students reach beyond themselves and their books. The educational benefits of CAS apply in the school community, and in the local, national and international communities.

CAS is about the education of the whole person, and its three elements are therefore interwoven. Together, they enable a student to recognize that there are many opportunities in life, away from formal academic study, to grow in knowledge of life, self and others. Creative and physical activities are particularly important for adolescents, and there are also pursuits which offer much opportunity for fun and enjoyment at a time which is, for many young people, full of stress and uncertainty. The service element of CAS is the most significant, but the two other elements are also very important, as they provide access, balance, and flexibility to meet individual students' interests and preferences.

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. This focus on learning outcomes emphasizes that it is the quality of a CAS activity (its contribution to the student's development) that is the most important. The guideline for the minimum amount of CAS activity is approximately the equivalent of half a day per school week (three to four hours per week), or approximately 150 hours in total, with a reasonable balance between creativity, action and service. "Hour counting", however, is not encouraged.

Schools monitor students' progress against a set of specified learning outcomes. There are three formal documented **interviews** students must have with their CAS coordinator/adviser. The first interview is at the beginning of the CAS programme, the second at the end of the first year, and the third interview is at the end of the CAS programme. The IB samples school records on a random basis.

Theory of Knowledge (TOK)

TOK is a core element which all Diploma Programme students undertake, and to which the school is to devote at least 100 hours of class time during the two years.

The core is seen as the heart of the Diploma Programme. The academic disciplines, while separate to the core, are nonetheless linked to it. As a consequence, the TOK course relies on the disciplines to provide enrichment, and individual subjects should be nourished by TOK. Teachers need to think about, and plan carefully, how TOK can feed into a deeper understanding of the subject matter studied by Diploma Programme students. This might include, for example, transferring the critical thinking process developed in TOK to the study of academic.

Fostering international-mindedness

TOK, just like the other two elements of the core, has a responsibility to foster and nurture international-mindedness, with the ultimate goal of developing responsible global citizens. To a large extent, TOK should be driven by the IB's mission "to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect" and "encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right" (IB mission statement).

To this end, TOK should encourage an exploration of issues of global significance, and in so doing, allow students to examine links between the local and the global. It should encourage students to consider the contexts and views of others, and should ensure that the principles and values developed by students are reflected upon throughout their lifetime.

Developing self-awareness and a sense of identity

TOK should strive to make a difference to the lives of students. It should provide opportunities for students to think about their own values and actions, to understand their place in the world, and to shape their identity.

Knowing about Knowing

The TOK course examines how we know what we claim to know. It does this by encouraging students to analyse **knowledge claims** (the assertion that "I/we know X" or "I/we know how to Y, or a statement about knowledge) and explore **knowledge questions** (an open question about knowledge). Meanwhile, a distinction between **shared knowledge** and **personal knowledge** should be made.

Ways of Knowing

When we are gaining and sharing knowledge we use the combination of eight ways of knowing: **language, sense perception, emotion, reason, imagination, faith, intuition, and memory**. Students must explore a range of ways of knowing, and it is suggested that studying four of these eight in depth would be appropriate.

The WOKs have two roles in TOK - they underlie the methodology of the areas of knowledge **and** they provide a basis for personal knowledge.

Teachers - after short introduction- should consider the possibility of teaching WOKs in combination with the areas of knowledge, rather than as separate units.

Areas of Knowledge

We gain and share knowledge about **mathematics, the natural sciences, the human sciences, the arts, history, ethics, religious knowledge systems, and indigenous knowledge systems**. Students must explore a range of areas of knowledge, and it is suggested that studying six of these eight would be appropriate.

The **knowledge framework** is a device for exploring the areas of knowledge. It identifies the key characteristics of each area of knowledge by depicting each area as a complex system of five interacting components. This enables students to effectively compare and contrast different areas of knowledge, and allows the possibility of a deeper exploration of the relationship between areas of knowledge and ways of knowing.

Knowledge in TOK

Knowledge can be viewed as the production of one or more human beings. It can be the work of a single individual arrived at as a result of a number of factors including the ways of knowing. Such individual knowledge is called **personal knowledge** in this guide. But knowledge can also be the work of a group of people working together either in concert or, more likely, separated by time or geography. Areas of knowledge such as the arts and ethics are of this form. These are examples of **shared knowledge**. There are socially established methods for producing knowledge of this sort, norms for what counts as a fact or a good explanation, concepts and language appropriate to each area and standards of rationality. These aspects of areas of knowledge can be organized into a knowledge framework. The ideal balance might not be 50:50; it is likely that significantly less time will be spent on personal knowledge and more on shared knowledge.

Knowledge claims

In TOK there are two types of **knowledge claims**.

First, there are claims that are made within particular areas of knowledge or by individual knowers **about the world**. It is the job of TOK to examine the basis for these first-order claims. Secondly, there are claims that are made **about knowledge**. These are the second-order claims made in TOK that are justified using the tools of TOK which usually involve an examination of the nature of knowledge.

The first type will feature in examples offered in the essay and presentation illustrating the manner in which areas of knowledge operate in producing knowledge. The second type will constitute the core of any piece of TOK analysis.

Knowledge questions (previously knowledge issues)

The whole point of the presentation and essay tasks is to deal with **knowledge questions**. Knowledge questions are questions **about** knowledge. Instead of focusing on specific content, they focus on how knowledge is constructed and evaluated. Knowledge questions are **open** in the sense that there are a number of plausible answers to them and they should be expressed in **general** terms, rather than using subject specific terms.

Assessment outline

The assessment model in theory of knowledge (TOK) has two components, - the essay and the presentation- both of which should be completed within the 100 hours designated for the course, and which are assessed using global impression marking. The essay contributes **67%** to the final mark, while the presentation contributes **33%** to the final mark.

The essay on a prescribed title is chosen from a list of six titles prescribed by the IB for each examination session. The prescribed titles will be issued on the OCC in the September prior to submission for May session schools, and in the March prior to submission for November session schools. The maximum length for the essay is **1,600 words**. All essays are **externally assessed** by the IB. (10 marks)

The presentation (assessed internally) is a performance to the class by an individual or a group (a maximum of three persons in a group). Approximately 10 minutes per student is allowed for the presentation. Students should compile a written presentation planning document (TK/PPD) at least one day prior to the presentation. The teacher must use the assessment descriptors published in the guide to arrive at a mark for the presentation based on the student's presentation plan (on the TK/PPD) and his/her observation of the presentation itself. The teacher must record his/her observations of the presentation on the TK/PPD. A sample of TK/PPDs is selected and **moderated** by the IB. (10 marks)

Assessment objectives

It is expected that by the end of the TOK course, students will be able to:

1. identify and analyse the various kinds of justifications used to support knowledge claims
2. formulate, evaluate and attempt to answer knowledge questions
3. examine how academic disciplines/areas of knowledge generate and shape knowledge
4. understand the roles played by ways of knowing in the construction of shared and personal knowledge
5. explore links between knowledge claims, knowledge questions, ways of knowing and areas of knowledge
6. demonstrate an awareness and understanding of different perspectives and be able to relate these to one's own perspective
7. explore a real-life/contemporary situation from a TOK perspective in the presentation.

Course Outline

Year 1

1 week	General introduction
8 weeks	Introduction into ways of knowing, knowledge framework, personal and shared knowledge
1 week	Introducing the presentation
6 weeks	AOK Natural Sciences
1 week	Presentations
6 weeks	AOK Mathematics
1 week	Presentations
6 weeks	AOK Arts
2-4 weeks	Introducing the essay, mock essay

Year 2

6 weeks	AOK Human Sciences
2 weeks	Essay
	1. first session on statements
	2. examples, knowledge questions
6 weeks	AOK History
2 weeks	Essay
	1. Group work – talking about KIs, claims, counter/claims
	2. first draft, consultations
6 weeks	AOK Indigenous Studies /Ethics
2 weeks	(final) Presentations

The extended essay (EE)

The extended essay is an in-depth study of a focused topic chosen from the list of approved Diploma Programme subjects – normally one of the student's six chosen subjects for the IB diploma. It is intended to promote high-level research and writing skills, intellectual discovery and creativity. It provides students with an opportunity to engage in personal research in a topic of their own choice, under the guidance of a supervisor (usually a teacher in the school). Candidates have 3 to 5 hours contact time with their supervisor, but they are expected to work independently for the remainder of the time. The supervisor provides the candidate with advice and guidance in the skills of undertaking research – by assisting, for example, with defining a suitable topic; with techniques of gathering and analysing information / evidence / data; with documentation methods for acknowledging sources and with writing an abstract. The work is typically undertaken over several months. 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. The IB recommends that completion of the written essay is followed by a short, concluding interview, or viva voce, with the supervisor.

The extended essay is:

- Compulsory for all Diploma Programme students
- 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
- A piece of independent research/investigation on a topic chosen by the student in cooperation with a supervisor in the school
- Chosen from the list of approved Diploma Programme subjects
- Printed as a formal piece of scholarship containing no more than 4 000 words
- The result of approximately 40 hours of work by the student (although many students willingly spend much more than this on it)
- Concluded with a short interview, or viva voce, with the supervising teacher (recommended)

In the Diploma Programme, the extended essay is the prime example of a piece of work where the student has the opportunity to show knowledge, understanding and enthusiasm about a topic of his or her choice. In those countries where it is the norm for interviews to be required prior to acceptance for employment or for a place at university, the extended essay has often proved to be a valuable stimulus for discussion.

Aims of the extended essay

The aims of the extended essay are to provide students with the opportunity to:

- pursue independent research on a focused topic
- develop research and communication skills
- develop the skills of creative and critical thinking
- engage in a systematic process of research appropriate to the subject
- experience the excitement of intellectual discovery.

Assessment objectives

In working on the extended essay, students are expected to:

1. Plan and pursue a research project with intellectual initiative and insight
2. Formulate a precise research question
3. Gather and interpret material from sources appropriate to the research question
4. Structure a reasoned argument in response to the research question on the basis of the material gathered
5. Present their extended essay in a format appropriate to the subject, acknowledging sources in one of the established academic ways
6. Use the terminology and language appropriate to the subject with skill and understanding
7. Apply analytical and evaluative skills appropriate to the subject, with an understanding of the implication and the context of their research.

Assessment criteria

All extended essays are externally assessed by examiners appointed by the IB, and are marked on a scale from 0 to 36. The maximum score is made up of the total criterion levels available for each essay. The total score obtained on this scale determines in which of bands A to E the extended essay is placed, which band, in conjunction with the band for theory of knowledge, determines the number of extra diploma points awarded for these two requirements. The assessment criteria are common to all extended essays, regardless of the subject; however, each separate subject area has specific guidance as to how the assessment criteria can be interpreted. A

proportion of the marks is based on subject-specific merit but the majority is awarded for specific research skills that are common and highly-transferable:

- formulation of Research Question (maximum 2 marks)
- introduction to the Research Question (maximum 2 marks)
- investigation (maximum 4 marks)
- knowledge and understanding of the topic (maximum 4 marks)
- reasoned argument (maximum 4 marks)
- application of analytical and evaluative skills (maximum 4 marks)
- appropriate use of language (maximum 4 marks)
- conclusion (maximum 2 marks)
- formal presentation (title page, table of contents, page numbers, referencing, bibliography, appendices (if used etc.) (maximum 4 marks)
- abstract (maximum 2 marks)
- holistic judgement (outstanding features of the essay, such as intellectual initiative, depth of understanding and insight) (maximum 4 marks)

GROUP 1

Group 1 courses are designed for students who have experience of using the language of the course in an academic context. The language background of such students, however, is likely to vary considerably - from monolingual students to students with more complex language profiles. The study of texts, both literary and non-literary, provides a focus for developing an understanding of how language works to create meanings in a culture, as well as in particular texts. All texts may be understood according to their form, content, purpose and audience, and through the social, historical, cultural and workplace contexts that produce and value them. Responding to, and producing, texts promotes an understanding of how language sustains or challenges ways of thinking and being.

To fulfill the requirements of the Diploma Programme, all students must study a group 1 subject selected from one of the courses above. One path to a bilingual diploma is to take two group 1 courses, each in a different language, in any combination of the three courses offered. Both the language A: literature course and the language A: language and literature course are offered at SL and HL. Literature and performance, which is an interdisciplinary subject (groups 1 and 6), is only available as an SL course.

Group 1 courses are designed to support future academic study by developing a high social, aesthetic and cultural literacy, as well as effective communication skills. While there is significant difference in the texts presented for study in the three courses, they will clearly overlap somewhat. There is no aim for each course to define completely separate territory. Instead, the main difference lies in the different areas of focus each takes. In the language A: literature course, focus is directed towards developing an understanding of the techniques involved in literary criticism and promoting the ability to form independent literary judgments. The focus of the language A: language and literature course is directed towards developing and understanding the constructed nature of meanings generated by language and the function of context in this process. Literature and performance allows students to combine literary analysis with the investigation of the role of performance in our understanding of dramatic literature.

Group 1 aims

The aims of **language A: literature** and **language A: language and literature** at SL and HL are to:

- introduce students to a range of texts from different periods, styles and genres
- develop in students the ability to engage in close, detailed analysis of individual texts and make relevant connections
- develop the students' powers of expression, both in oral and written communication
- encourage students to recognize the importance of the contexts in which texts are written and received
- encourage, through the study of texts, an appreciation of the different perspectives of people from other cultures, and how these perspectives construct meaning
- encourage students to appreciate the formal, stylistic and aesthetic qualities of texts
- promote in students an enjoyment of, and lifelong interest in, language and literature.
- develop in students an understanding of how language, culture and context determine the ways in which meaning is constructed in texts
- encourage students to think critically about the different interactions between text, audience and purpose
- introduce students to a range of texts from different periods, styles and genres

Hungarian A: Literature

In the language A: literature course, focus is directed towards developing an understanding of the techniques involved in literary criticism and promoting the ability to form independent literary judgments. The course may be studied in a wide range of languages, which enables students participating in the IB Diploma Programme to continue to develop oral and written skills in their mother tongue while studying in a different language of instruction. Therefore in the Hungarian A: literature course students perform their written and oral tasks in Hungarian.

The Language A: literature course is

- intercultural in nature – students have to study at least three works in translation,
- flexible – the syllabus allows teachers to choose from several authors,
- academically demanding – it requires students to understand the techniques involved in literary criticism, and to form independent literary judgments and to support those ideas.

Hungarian A: literature Standard Level (Total: 150 hours during the two years)

Core syllabus content	<p>Part 1: Works in translation SL: Two works (40 hours)</p> <p>All works are chosen from the titles in the prescribed literature in translation (PLT) list.</p> <p>Part 2: Detailed study SL: Two works (40 hours)</p> <p>All works are chosen from the prescribed list of authors (PLA) for the language A being studied, each from a different genre.</p> <p>Part 3: Literary genres SL: Three works (40 hours)</p> <p>All works are chosen from the prescribed list of authors (PLA) for the language A being studied, all from the same genre.</p> <p>Part 4: Options SL: Three works (30 hours)</p> <p>Works are freely chosen in any combination. Authors must not be repeated within any part of the syllabus but the same author may be studied in two different parts of the syllabus.</p>
Internal assessment	<p>This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.</p> <p>Individual oral commentary (10 minutes)</p> <p>Students present a formal oral commentary and answer subsequent questions on an extract from a work studied in part 2. 15% of the final mark</p> <p>Individual oral presentation (10–15 minutes)</p> <p>The presentation is based on works studied in part 4. It is internally assessed and externally moderated through the part 2 internal assessment task. 15% of the final mark</p>

External assessment	<p>Paper 1: Guided literary analysis (1 hour 30 minutes)</p> <p>The paper consists of two passages: one prose and one poetry. Students choose one and write a guided literary analysis in response to two questions. 20 % of the final mark</p> <p>Paper 2: Essay (1 hour 30 minutes)</p> <p>The paper consists of three questions for each literary genre. In response to one question students write an essay based on at least two works studied in part 3. 25% of the final mark</p> <p>Written assignment</p> <p>Students submit a reflective statement and literary essay on one work studied in part 1. The reflective statement must be 300–400 words in length. The essay must be 1,200–1,500 words in length. 25% of the final mark</p>
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Hungarian A: literature Higher Level (Total: 240 hours during the two years)

Core syllabus content	<p>Part 1: Works in translation HL: Three works (65 hours)</p> <p>All works are chosen from the titles in the prescribed literature in translation (PLT) list.</p> <p>Part 2: Detailed study HL: Three works (65 hours)</p> <p>All works are chosen from the prescribed list of authors (PLA) for the language A being studied, each from a different genre.</p> <p>Part 3: Literary genres HL: Four works (65 hours)</p> <p>All works are chosen from the prescribed list of authors (PLA) for the language A being studied, all from the same genre.</p> <p>Part 4: Options HL: Three works (45 hours)</p> <p>Works are freely chosen in any combination. Authors must not be repeated within any part of the syllabus but the same author may be studied in two different parts of the syllabus.</p>
Internal assessment	<p>This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.</p> <p>Individual oral commentary and discussion (20 minutes)</p> <p>Formal oral commentary on poetry studied in part 2 with subsequent questions (10 minutes) followed by a discussion based on one of the other part 2 works (10 minutes). 15% of the final mark</p> <p>Individual oral presentation (10–15 minutes)</p> <p>The presentation is based on works studied in part 4. It is internally assessed and externally moderated through the part 2 internal assessment task. 15% of the final mark</p>

External assessment	<p>Paper 1: Literary analysis (2 hours)</p> <p>The paper consists of two passages: one prose and one poetry. Students choose one and write a guided literary analysis in response to two questions.</p> <p>20 % of the final mark</p> <p>Paper 2: Essay (2 hours)</p> <p>The paper consists of three questions for each literary genre. In response to one question students write an essay based on at least two works studied in part 3.</p> <p>25% of the final mark</p> <p>Written assignment</p> <p>Students submit a reflective statement and literary essay on one work studied in part 1.</p> <p>The reflective statement must be 300–400 words in length. The essay must be 1,200–1,500 words in length.</p> <p>25% of the final mark</p>
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English A: Language and Literature

Language A: language and literature comprises four parts—two relate to the study of language and two to the study of literature.

The study of the texts produced in a language is central to an active engagement with language and culture and, by extension, to how we see and understand the world in which we live. A key aim of the language A: language and literature course is to encourage students to question the meaning generated by language and texts, which, it can be argued, is rarely straightforward and unambiguous. Helping students to focus closely on the language of the texts they study and to become aware of the role of each text’s wider context in shaping its meaning is central to the course.

The language A: language and literature course aims to develop in students skills of textual analysis and the understanding that texts, both literary and non-literary, can be seen as autonomous yet simultaneously related to culturally determined reading practices. The course is designed to be flexible—teachers have the opportunity to construct it in a way that reflects the interests and concerns that are relevant to their students while developing in students a range of transferable skills. An understanding of the ways in which formal elements are used to create meaning in a text is combined with an exploration of how that meaning is affected by reading practices that are culturally defined and by the circumstances of production and reception.

Due to the central role of English as a language of delivery of the Diploma Programme, both Higher Level and Standard Level students study the subject in 240 hours.

English A: Language and Literature Standard and Higher Level (Total: 240 hours during the two years)

Syllabus component and assessment focus	Topics covered and text types used
<p>Unit 1 - Part 1: Language in cultural context (60 hours)</p> <p>Assessment focus for unit</p> <ul style="list-style-type: none"> • Paper 1 (practice) • Further oral • Written task 1 • (HL: Written task 2—potentially summative) 	<p>Texts are chosen from a variety of sources, genres and media.</p> <p>Topics to be covered</p> <ul style="list-style-type: none"> • Language and power • Language and gender • Language in translation <p>Text types</p> <ul style="list-style-type: none"> • Presentation (and oral presentation skills) • Essay—analytical (HL: comparative) • Drama (play text) • Poem • Speech • Cartoon • Manifesto • Interview • Magazine article • Diary • Letter (formal and informal) • Parody and pastiche
<p>Unit 2 - Part 4: Literature—critical study (50 hours)</p> <p>Assessment focus for unit</p> <ul style="list-style-type: none"> • Paper 1 (practice) • Individual oral • Written task • (HL: Written task 2) 	<p>SL: Two texts, both of which are chosen from the prescribed list of authors (PLA) for the language A studied.</p> <p>HL: Three texts, all of which are chosen from the prescribed list of authors (PLA) for the language A studied.</p> <p>Material to be covered</p> <ul style="list-style-type: none"> • The Great Gatsby by F. Scott Fitzgerald • The Crucible by Arthur Miller • (HL only: short stories by E. A. Poe and various authors) <p>Text types</p> <ul style="list-style-type: none"> • Presentation (and oral presentation skills) • Essay—analytical and persuasive (HL: comparative essay) • Short story • Novel • Poem

	<ul style="list-style-type: none"> • Drama • Biography • Radio broadcast • Encyclopedia entry • Letter (formal and informal) • Report • Chart • Database • Diagram • Appeal • Song lyric • Travel writing
<p>Unit 3 - Part 2 Language and mass communication (60 hours)</p> <p>Assessment focus for unit</p> <ul style="list-style-type: none"> • Paper 1 (practice) • Further oral • Written task 1 • (HL: Written task 2) 	<p>Texts are chosen from a variety of sources, genres and media.</p> <p>Material to be covered</p> <ul style="list-style-type: none"> • Language and political campaign • Media and editing • Stereotypes <p>Text types</p> <ul style="list-style-type: none"> • Presentation (and oral presentation skills) • Essay—analytical and persuasive (HL: comparative essay) • Novel • Drama (film text) • News report • Blog • Editorial • Memoir • Opinion column • Instructions • Textbook
<p>Unit 4: Part 3 Literature—texts and contexts (70 hours)</p> <p>Assessment focus for unit</p> <ul style="list-style-type: none"> • Paper 1 (practice) • Paper 2 (practice) • Written task 1 • (HL: Written task 2) 	<p>SL: Two texts, one of which is a text in translation from the prescribed literature in translation (PLT) list and one, written in the language A studied, from the prescribed list of authors (PLA) for the language A studied, or chosen freely.</p> <p>HL: Three texts, one of which is a text in translation chosen from the prescribed literature in translation (PLT) list and one from the prescribed list of authors (PLA) for the language A studied. The other may be chosen freely.</p> <p>Material to be covered</p> <ul style="list-style-type: none"> • Death and the Maiden by Ariel Dorfman • The French Lieutenant’s Woman by John Fowles • (HL only: The Catcher in the Rye by J. D. Salinger) <p>Text types</p> <ul style="list-style-type: none"> • Presentation (and oral presentation skills) • Essay—analytical and persuasive (HL: comparative essay) • Novel • Drama (play text) • Advertisement • Brochure/leaflet • Guide book • Photographs • Screenplay • Travel writing

Assessment – Standard Level

Internal assessment	<p>This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.</p> <p>Individual oral commentary</p> <p>Students comment on an extract from a literary text studied in part 4 of the course. Students are given two guiding questions. 15% of the final mark</p> <p>Further oral activity</p> <p>Students complete at least two further oral activities, one based on part 1 and one based on part 2 of the course. The mark of one further oral activity is submitted for final assessment. 15% of the final mark</p>
External assessment	<p>Paper 1: Textual analysis (1 hour 30 minutes)</p> <p>The paper consists of two unseen texts. Students write an analysis of one of these texts. (20 marks) 25 % of the final mark</p> <p>Paper 2: Essay (1 hour 30 minutes)</p> <p>In response to one of six questions students write an essay based on both the literary texts studied in part 3. The questions are the same at HL but the assessment criteria are different. (25 marks) 25% of the final mark</p> <p>Written task</p> <p>Students produce at least three written tasks based on material studied in the course. Students submit one written task for external assessment. (20 marks) This task must be 800–1,000 words in length plus a rationale of 200–300 words. 20% of the final mark</p>

Assessment – Higher Level

<p>Internal assessment</p>	<p>This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.</p> <p>Individual oral commentary</p> <p>Students comment on an extract from a literary text studied in part 4 of the course. Students are given two guiding questions. 15% of the final mark</p> <p>Further oral activity</p> <p>Students complete at least two further oral activities, one based on part 1 and one based on part 2 of the course. The mark of one further oral activity is submitted for final assessment. 15% of the final mark</p>
<p>External assessment</p>	<p>Paper 1: Comparative textual analysis (2 hours)</p> <p>The paper consists of two pairs of unseen texts. Students write a comparative analysis of one pair of texts. (20 marks) 25 % of the final mark</p> <p>Paper 2: Essay (2 hours)</p> <p>In response to one of six questions students write an essay based on at least two of the literary texts studied in part 3. The questions are the same at SL but the assessment criteria are different. (25 marks) 25% of the final mark</p> <p>Written tasks</p> <p>Students produce at least four written tasks based on material studied in the course. Students submit two of these tasks for external assessment. (20 marks for each task) One of the tasks submitted must be a critical response to one of the prescribed questions for the HL additional study. Each task must be 800–1,000 words in length; task 1 should be accompanied by a rationale of 200–300 words, while task 2 should be accompanied by a short outline. 20% of the final mark</p>

GROUP 2

Group 2 consists of two modern language courses—language ab initio and language B—that are offered in a number of languages, and a classical languages course that is offered in Latin and Classical Greek. 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 encourages the learner to go beyond the confines of the classroom, expanding an awareness of the world and fostering respect for cultural diversity.

The group 2 courses use a balance between approaches to learning that are teacher-centred (teacher-led activities and assessment in the classroom) and those that are learner-centred (activities designed to allow the students to take the initiative, which can also involve student participation in the evaluation of their learning). The teacher is best placed to evaluate the needs of the students and is expected to encourage both independent and collaborative learning. The two modern language courses—language ab initio and language B—develop students' linguistic abilities through the development of receptive, productive and interactive skills (as defined in "Syllabus content"). The classical languages course focuses on the study of the language, literature and culture of the classical world.

Group 2 aims

Group 2 consists of three language courses accommodating the different levels of linguistic proficiency that students have when they begin. There is a single set of group 2 aims, which are common to all the courses, but the assessment objectives are differentiated according to what the students are expected to be able to demonstrate at the end of each course.

The aims of group 2 are to:

1. develop students' intercultural understanding
2. enable students to understand and use the language they have studied in a range of contexts and for a variety of purposes
3. encourage, through the study of texts and through social interaction, an awareness and appreciation of the different perspectives of people from other cultures
4. develop students' awareness of the role of language in relation to other areas of knowledge
5. develop students' awareness of the relationship between the languages and cultures with which they are familiar
6. provide students with a basis for further study, work and leisure through the use of an additional language
7. provide the opportunity for enjoyment, creativity and intellectual stimulation through knowledge of an additional language.

Language B

Language B is a language-learning course designed for students with some previous learning of that language. It is generally studied either at SL or HL. The main focus of the course is on language acquisition, on the development of language skills and intercultural understanding. These skills are developed through the study and use of a wide range of written and spoken material, which extends from everyday oral exchanges to literary texts that are related to the culture(s) concerned.

The study of an additional language in group 2 adds to the international dimension of the Diploma Programme. Within group 2, intercultural understanding is a major cohesive element of the syllabus in both language ab initio and language B. While learning the target language, the student becomes aware of the similarities and differences between his or her own culture(s) and those of the target culture(s). With this awareness, a greater respect for other peoples and the way in which they lead their lives is fostered. Within the course framework, through the study of authentic texts, students investigate and reflect on cultural values and behaviours.

The language B course achieves this reflection on cultural values and behaviours in different ways. The course is organized through a core and options, all of which are well suited to fostering an international perspective. The language B course seeks to develop international understanding and foster a concern for global issues, as well as to raise students' awareness of their own responsibility at a local level. It also seeks to develop students' intercultural awareness, which contributes to the relationship between language B and the international dimension.

The course enables students:

- to communicate clearly and effectively in a range of situations, demonstrating linguistic competence and intercultural understanding.
- to use language appropriate to a range of interpersonal and/or cultural contexts
- to understand and use language to express and respond to a range of ideas with accuracy and fluency
- to organize ideas on a range of topics, in a clear, coherent and convincing manner
- to understand, analyse and respond to a range of written and spoken texts
- to understand and use works of literature written in the target language of study (HL only)

Language B (Total 150 hours at Standard Level and 240 hours at Higher Level)

Syllabus content	Core topics studies both at HL and SL: <i>Communication and Media</i> <i>Global Issues</i> <i>Social relationships</i> Options : Two topics are studied from the five options at both HL and SL levels. <i>Cultural diversity</i> <i>Customs and traditions</i> <i>Health</i> <i>Leisure</i> <i>Science and Technology</i> HL: Students read two works of literature.
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Assessment at Standard Level

<p>Internal assessment This component is internally assessed by the teacher and externally moderated by the IB.</p>	<p>Individual oral (8-10minutes) Based on the options: 15 minutes' preparation time and a 10-minute (maximum) presentation and discussion with the teacher. 20% of the final mark</p> <p>Interactive oral activity Based on the core: Three classroom activities assessed by the teacher. 10% of the final mark</p>
<p>External assessment</p>	<p>Paper 1 (1 hour 30 minutes) Receptive skills Text-handling exercises on four written texts, based on the core. 25% of the final mark</p> <p>Paper 2 (1 hours 30 minutes): Written productive skills One writing exercise of 250-400 words from a choice of five, based on the options. 25% of the final mark</p> <p>Written assignment: Receptive and written productive skills Intertextual reading followed by a written exercise of 300-400 words plus a 100-word rationale, based on the core. 20% of the final mark</p>

Assessment at Higher Level

<p>Internal assessment This component is internally assessed by the teacher and externally moderated by the IB.</p>	<p>Individual oral (8-10minutes) Based on the options: 15 minutes' preparation time and a 10-minute (maximum) presentation and discussion with the teacher. 20% of the final mark</p> <p>Interactive oral activity Based on the core: Three classroom activities assessed by the teacher. 10% of the final mark</p>
<p>External assessment</p>	<p>Paper 1 (1 hour 30 minutes) Receptive skills Text-handling exercises on four written texts, based on the core. 25% of the final mark</p> <p>Paper 2 (1 hours 30 minutes): Written productive skills Two compulsory writing exercises. Section A: One task of 250-400 words, based on the options, to be selected from a choice of five. Section B: Response of 150-250 words to a stimulus text, based on the core. 25% of the final mark</p> <p>Written assignment: Receptive and written productive skills Creative writing of 500-600 words plus a 150-word rationale, based on one of the literary texts read. 20% of the final mark</p>

GROUP 3

The aims of all subjects in group 3, individuals and societies, are to:

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

History

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.

History aims

Besides the general aims of all Group 3 subjects, the aims of the history course at SL and HL are to:

7. develop an understanding of, and continuing interest in, the past
8. encourage students to engage with multiple perspectives and to appreciate the complex nature of historical concepts, issues, events and developments
9. promote international-mindedness through the study of history from more than one region of the world
10. develop an understanding of history as a discipline and to develop historical consciousness including a sense of chronology and context, and an understanding of different historical perspectives
11. develop key historical skills, including engaging effectively with sources
12. increase students' understanding of themselves and of contemporary society by encouraging reflection on the past.

Assessment objectives in History

Assessment objective 1: Knowledge and understanding

- Demonstrate detailed, relevant and accurate historical knowledge.
- Demonstrate understanding of historical concepts and context.
- Demonstrate understanding of historical sources. (Internal assessment and paper 1)

Assessment objective 2: Application and analysis

- Formulate clear and coherent arguments.
- Use relevant historical knowledge to effectively support analysis.
- Analyse and interpret a variety of sources. (Internal assessment and paper 1)

Assessment objective 3: Synthesis and evaluation

- Integrate evidence and analysis to produce a coherent response.
- Evaluate different perspectives on historical issues and events, and integrate this evaluation effectively into a response.
- Evaluate sources as historical evidence, recognizing their value and limitations. (Internal assessment and paper 1)
- Synthesize information from a selection of relevant sources. (Internal assessment and paper 1)

Assessment objective 4: Use and application of appropriate skills

- Structure and develop focused essays that respond effectively to the demands of a question.
- Reflect on the methods used by, and challenges facing, the historian. (Internal assessment)
- Formulate an appropriate, focused question to guide a historical inquiry. (Internal assessment)
- Demonstrate evidence of research skills, organization, referencing and selection of appropriate sources. (Internal assessment)

History Standard Level (Total 150 hours during the two years)

<p>Prescribed subject</p>	<p>The move to global war</p> <p>Case study 1: Japanese expansion in East Asia (1931–1941)</p> <p>Causes of expansion</p> <ul style="list-style-type: none"> • The impact of Japanese nationalism and militarism on foreign policy • Japanese domestic issues: political and economic issues, and their impact on foreign relations • Political instability in China <p>Events</p> <ul style="list-style-type: none"> • Japanese invasion of Manchuria and northern China (1931) • Sino-Japanese War (1937–1941) • The Three Power/Tripartite Pact; the outbreak of war; Pearl Harbor (1941) <p>Responses</p> <ul style="list-style-type: none"> • League of Nations and the Lytton report • Political developments within China—the Second United Front • International response, including US initiatives and increasing tensions between the US and Japan <p>Case study 2: German and Italian expansion (1933–1940)</p> <p>Causes of expansion</p> <ul style="list-style-type: none"> • Impact of fascism and Nazism on the foreign policies of Italy and Germany • Impact of domestic economic issues on the foreign policies of Italy and Germany • Changing diplomatic alignments in Europe; the end of collective security; appeasement <p>Events</p> <ul style="list-style-type: none"> • German challenges to the post-war settlements (1933–1938) • Italian expansion: Abyssinia (1935–1936); Albania; entry into the Second World War • German expansion (1938–1939); Pact of Steel, Nazi–Soviet Pact and the outbreak of war <p>Responses</p> <ul style="list-style-type: none"> • International response to German aggression (1933–1938) • International response to Italian aggression (1935–1936) • International response to German and Italian aggression (1940)
<p>World history topics</p>	<p>Authoritarian states (20th century)</p> <ul style="list-style-type: none"> • Conditions in which authoritarian states emerged: economic factors; social division; impact of war; weakness of political system • Methods used to establish authoritarian states: persuasion and coercion; the role of leaders; ideology; the use of force; propaganda • Use of legal methods; use of force; charismatic leadership; dissemination of propaganda • Nature, extent and treatment of opposition • The impact of the success and/or failure of foreign policy on the maintenance of power • Aims and impact of domestic economic, political, cultural and social policies • The impact of policies on women and minorities • Authoritarian control and the extent to which it was achieved <p>Above topics are explored through the examples of Hitler, Stalin, Mao</p> <p>Causes and effects of 20th century wars</p> <ul style="list-style-type: none"> • Economic, ideological, political, territorial and other causes • Short- and long-term causes • Types of war: civil wars; wars between states; guerrilla wars • Technological developments; theatres of war—air, land and sea • The extent of the mobilization of human and economic resources • The influence and/or involvement of foreign powers • The successes and failures of peacemaking • Territorial changes • Political repercussions • Economic, social and demographic impact; changes in the role and status of women <p>Above topics are explored through the examples of the First and the Second World</p>

	War, the Spanish and Chinese Civil Wars
Internal Assessment	This component is internally assessed by the teacher and externally moderated by the IB at the end of the course. Historical investigation Students are required to complete a historical investigation into a topic of their choice. (25 marks) 25% of the final mark
External Assessment	Paper 1 (1 hour) Source-based paper based on the five prescribed subjects. Choose one prescribed subject from a choice of five. Answer four structured questions. (24 marks) 30% of the final mark Paper 2 (1 hour 30 minutes) Essay paper based on the 12 world history topics. Answer two essay questions on two different topics. (30 marks) 45% of the final mark

History Higher Level (Total 240 hours during the two years)

Prescribed subject	<p>The move to global war</p> <p>Case study 1: Japanese expansion in East Asia (1931–1941)</p> <p>Causes of expansion</p> <ul style="list-style-type: none"> • The impact of Japanese nationalism and militarism on foreign policy • Japanese domestic issues: political and economic issues, and their impact on foreign relations • Political instability in China <p>Events</p> <ul style="list-style-type: none"> • Japanese invasion of Manchuria and northern China (1931) • Sino-Japanese War (1937–1941) • The Three Power/Tripartite Pact; the outbreak of war; Pearl Harbor (1941) <p>Responses</p> <ul style="list-style-type: none"> • League of Nations and the Lytton report • Political developments within China—the Second United Front • International response, including US initiatives and increasing tensions between the US and Japan <p>Case study 2: German and Italian expansion (1933–1940)</p> <p>Causes of expansion</p> <ul style="list-style-type: none"> • Impact of fascism and Nazism on the foreign policies of Italy and Germany • Impact of domestic economic issues on the foreign policies of Italy and Germany • Changing diplomatic alignments in Europe; the end of collective security; appeasement <p>Events</p> <ul style="list-style-type: none"> • German challenges to the post-war settlements (1933–1938) • Italian expansion: Abyssinia (1935–1936); Albania; entry into the Second World War • German expansion (1938–1939); Pact of Steel, Nazi–Soviet Pact and the outbreak of war <p>Responses</p> <ul style="list-style-type: none"> • International response to German aggression (1933–1938) • International response to Italian aggression (1935–1936) • International response to German and Italian aggression (1940)
World history topics	<p>Authoritarian states (20th century)</p> <ul style="list-style-type: none"> • Conditions in which authoritarian states emerged: economic factors; social division; impact of war; weakness of political system • Methods used to establish authoritarian states: persuasion and coercion; the role of leaders; ideology; the use of force; propaganda • Use of legal methods; use of force; charismatic leadership; dissemination of propaganda • Nature, extent and treatment of opposition • The impact of the success and/or failure of foreign policy on the

	<p>maintenance of power</p> <ul style="list-style-type: none"> • Aims and impact of domestic economic, political, cultural and social policies • The impact of policies on women and minorities • Authoritarian control and the extent to which it was achieved <p>Above topics are explored through the examples of Hitler, Stalin, Mao</p> <p>Causes and effects of 20th century wars</p> <ul style="list-style-type: none"> • Economic, ideological, political, territorial and other causes • Short- and long-term causes • Types of war: civil wars; wars between states; guerrilla wars • Technological developments; theatres of war—air, land and sea • The extent of the mobilization of human and economic resources • The influence and/or involvement of foreign powers • The successes and failures of peacemaking • Territorial changes • Political repercussions • Economic, social and demographic impact; changes in the role and status of Women <p>Above topics are explored through the examples of the First and the Second World War, the Spanish and Chinese Civil Wars</p>
<p>HL Options: History of Europe</p>	<p>13: Europe and the First World War (1871–1918)</p> <p>This section deals with the shorter- and longer-term origins of the First World War. It covers the breakdown of European diplomacy pre-1914 and the crises that occurred in international relations. It covers how the practice of war affected the military and home fronts. The section also investigates reasons for the Allied victory/Central Powers’ defeat.</p> <ul style="list-style-type: none"> • European diplomacy and the changing balance of power after 1871; imperial expansion in Africa and Asia, and its impact on European diplomacy; the Congress of Berlin and European Alliance system • Foreign policy of Kaiser Wilhelm II: domestic conditions that impacted on German foreign policy; its impact/influence on other countries, including Britain, France, Russia and Austria-Hungary • Causes of the First World War: short- and long-term causes; relative importance of causes; the Alliance system; the decline of the Ottoman Empire; German foreign policy; Austria-Hungary, Russia and Balkan nationalism; the arms race and diplomatic crises; the July Crisis of 1914 • Impact of the First World War on civilian populations of two countries from the region between 1914 and 1918 • Factors leading to the defeat of Germany and the other Central Powers, and to the victory of the Entente Powers: strategic errors; economic factors; entry and role of the US; domestic instability in the Central Powers <p>14: European states in the inter-war years (1918–1939)</p> <p>This section deals with domestic developments in certain key European states in the period between the two world wars. It requires the study of four European countries: Germany, Italy, Spain and any one other country. The section considers the impact of the end of the First World War, then examines the economic, social and cultural changes in each country during the 1920s and 1930s.</p> <ul style="list-style-type: none"> • Weimar Germany: constitutional, political, economic/financial and social issues (1918–1933); initial challenges (1918–1923); “Golden Era” under Stresemann (1924–1929); the crisis years and the rise of Hitler (1929–1933) • Hitler’s Germany (1933–1939): consolidation of power; Hitler’s pre-war domestic policies, including economic, social and political policies; nature of the Nazi state; the extent of resistance to the Nazis • Italy (1918–1939): rise of Mussolini; consolidation of power; Mussolini’s pre-war domestic policies, including economic, social and political policies; nature of the fascist state • Spain (1918–1939): political, social and economic conditions in Spain; the Primo de Rivera regime; polarization and political parties under the Second Republic; Azaña and Gil Robles; causes of the Civil War; foreign involvement; reasons for nationalist victory under Franco

	<ul style="list-style-type: none"> • Case study of domestic political, economic and social developments in one European country (other than Germany, Italy or Spain) in the inter-war years. <p>15: Versailles to Berlin: Diplomacy in Europe (1919–1945)</p> <p>This section addresses international relations in Europe from 1919 to 1945 with initial emphasis on the Paris Peace Settlement: its goals, impact and the problems relating to its enforcement. The section covers attempts to promote collective security and international cooperation through the League of Nations and multilateral agreements (outside the League mechanism), arms reduction and the pursuit of foreign policy goals without resort to violence. This section also addresses the individual foreign policies of Italy, Germany, France, Britain and Russia/Soviet Union, looking at the aims, issues and success of each one. It concludes with a study of the Second World War, looking particularly at the impact of the war and the reasons for German defeat and Allied victory.</p> <ul style="list-style-type: none"> • Peace settlements (1919–1923): Versailles; Neuilly; Trianon; St Germain; and Sèvres/Lausanne—aims, issues and responses • The League of Nations and Europe: successes and failures; the search for collective security; developments in the successor states of central and eastern Europe • Italian and German foreign policies (1919–1941): aims, issues and extent of success • Collective security and appeasement (1919–1941): aims, issues and extent of success; role of British, French and Russian/Soviet foreign policies (1919–1941); Chamberlain and the Munich Crisis • Causes of the Second World War and the development of European conflict (1939–1941); the wartime alliance (1941–1945); reasons for Axis defeat in 1945 and for Allied victory; role of economic, strategic and other factors • Impact of the Second World War on civilian populations in any two countries between 1939–1945
Internal Assessment	<p>This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.</p> <p>Historical investigation</p> <p>Students are required to complete a historical investigation into a topic of their choice. (25 marks)</p> <p>20% of the final mark</p>
External Assessment	<p>Paper 1 (1 hour)</p> <p>Source-based paper based on the five prescribed subjects. Choose one prescribed subject from a choice of five. Answer four structured questions. (24 marks)</p> <p>20% of the final mark</p> <p>Paper 2 (1 hour 30 minutes)</p> <p>Essay paper based on the 12 world history topics. Answer two essay questions on two different topics. (30 marks)</p> <p>25% of the final mark</p> <p>Paper 3 (2 hours 30 minutes)</p> <p>Separate papers for each of the four regional options. For the selected region, answer three essay questions. (45 marks)</p> <p>35% of the final mark</p>

Economics (offered only at SL)

Economics is a dynamic social science, forming part of group 3—individuals and societies. The study of economics is essentially about dealing with scarcity, resource allocation and the methods and processes by which choices are made in the satisfaction of human wants. As a social science, economics uses scientific methodologies that include quantitative and qualitative elements.

The IB Diploma Programme economics course emphasizes the economic theories of microeconomics, which deal with economic variables affecting individuals, firms and markets, and the economic theories of macroeconomics, which deal with economic variables affecting countries, governments and societies. These economic theories are not to be studied in a vacuum—rather, they are to be applied to real-world issues. Prominent among these issues are fluctuations in economic activity, international trade, economic development and environmental sustainability.

The ethical dimensions involved in the application of economic theories and policies permeate throughout the economics course as students are required to consider and reflect on human end-goals and values. The economics course encourages students to develop international perspectives, fosters a concern for global issues, and raises students' awareness of their own responsibilities at a local, national and international level. The course also seeks to develop values and attitudes that will enable students to achieve a degree of personal commitment in trying to resolve these issues, appreciating our shared responsibility as citizens of an increasingly interdependent world.

Economics aims

In addition to the general Group 3 aims, the aims of the **economics** syllabus at SL and HL are to enable students to:

7. develop an understanding of microeconomic and macroeconomic theories and concepts and their real-world application
8. develop an appreciation of the impact on individuals and societies of economic interactions between nations
9. develop an awareness of development issues facing nations as they undergo the process of change.

Assessment objectives

There are four assessment objectives (AOs) for the SL and HL economics course. Having followed the economics course at SL or HL, students will be expected to do the following:

1. Demonstrate knowledge and understanding of specified content
 - Demonstrate knowledge and understanding of the common SL/HL syllabus
 - Demonstrate knowledge and understanding of current economic issues and data
 - **At HL only:** Demonstrate knowledge and understanding of the higher level extension topics
2. Demonstrate application and analysis of knowledge and understanding
 - Apply economic concepts and theories to real-world situations
 - Identify and interpret economic data
 - Demonstrate the extent to which economic information is used effectively in particular contexts
 - **At HL only:** Demonstrate application and analysis of the extension topics
3. Demonstrate synthesis and evaluation
 - Examine economic concepts and theories
 - Use economic concepts and examples to construct and present an argument
 - Discuss and evaluate economic information and theories
 - **At HL only:** Demonstrate economic synthesis and evaluation of the extension topics
4. Select, use and apply a variety of appropriate skills and techniques
 - Produce well-structured written material, using appropriate economic terminology, within specified time limits
 - Use correctly labelled diagrams to help explain economic concepts and theories
 - Select, interpret and analyse appropriate extracts from the news media
 - Interpret appropriate data sets
 - **At HL only:** Use quantitative techniques to identify, explain and analyse economic relationships

Economics Standard Level (Total: 150 hours during the two years)

<p>Syllabus content</p>	<p>Section 1: Microeconomics (35 hours) 1.1 Competitive markets: demand and supply 1.2 Elasticity 1.3 Government intervention 1.4 Market failure</p> <p>Section 2: Macroeconomics (40 hours) 2.1 The level of overall economic activity 2.2 Aggregate demand and aggregate supply 2.3 Macroeconomic objectives 2.4 Fiscal policy 2.5 Monetary policy 2.6 Supply-side policies</p> <p>Section 3: International economics (25 hours) 3.1 International trade 3.2 Exchange rates 3.3 The balance of payments 3.4 Economic integration</p> <p>Section 4: Development economics (30 hours) 4.1 Economic development 4.2 Measuring development 4.3 The role of domestic factors 4.4 The role of international trade 4.5 The role of foreign direct investment (FDI) 4.6 The roles of foreign aid and multilateral development assistance 4.7 The role of international debt 4.8 The balance between markets and intervention</p>
<p>Internal assessment</p>	<p>Portfolio of three commentaries (20 hours) 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 sections of the syllabus and on published extracts from the news media. Maximum 750 words x 3 (45 marks) 20% of the final mark</p>
<p>External assessment</p>	<p>Paper 1 (1 hour and 30 minutes) An extended response paper (50 marks) Assessment objectives 1, 2, 3, 4</p> <p>Section A Syllabus content: section 1—microeconomics Students answer one question from a choice of two. (25 marks)</p> <p>Section B Syllabus content: section 2—macroeconomics Students answer one question from a choice of two. (25 marks)</p> <p>40% of the final mark</p> <p>Paper 2 (1 hour and 30 minutes) A data response paper (40 marks) Assessment objectives 1, 2, 3, 4</p> <p>Section A Syllabus content: section 3—international economics Students answer one question from a choice of two. (20 marks)</p> <p>Section B Syllabus content: section 4—development economics Students answer one question from a choice of two. (20 marks)</p> <p>40% of the total mark</p> <p>Calculators: The use of calculators is not permitted in Paper 1 and Paper 2.</p>

Psychology (offered only at SL)

Psychology is the systematic study of behaviour and mental processes. Psychology has its roots in both the natural and social sciences, leading to a variety of research designs and applications, and providing a unique approach to understanding modern society.

IB psychology examines the interaction of biological, cognitive and sociocultural influences on human behaviour, thereby adopting an integrative approach. Understanding how psychological knowledge is generated, developed and applied enables students to achieve a greater understanding of themselves and appreciate the diversity of human behaviour. The ethical concerns raised by the methodology and application of psychological research are key considerations in IB psychology.

Psychology aims

In addition to general Group 3 aims, the aims of the **psychology** course at SL and HL are to:

7. develop an awareness of how psychological research can be applied for the benefit of human beings
8. ensure that ethical practices are upheld in psychological inquiry
9. develop an understanding of the biological, cognitive and sociocultural influences on human behaviour
10. develop an understanding of alternative explanations of behaviour
11. understand and use diverse methods of psychological inquiry.

Assessment objectives

Having followed the psychology course at SL or at HL, students will be expected to demonstrate the following.

1. Knowledge and comprehension of specified content
 - Demonstrate knowledge and comprehension of key terms and concepts in psychology
 - Demonstrate knowledge and comprehension of psychological research methods
 - Demonstrate knowledge and comprehension of a range of appropriately identified psychological theories and research studies
 - Demonstrate knowledge and comprehension of the biological, cognitive and sociocultural levels of analysis
 - Demonstrate knowledge and comprehension of one option at SL or two options at HL
2. Application and analysis
 - Demonstrate an ability to use examples of psychological research and psychological concepts to formulate an argument in response to a specific question
 - At HL only, analyse qualitative psychological research in terms of methodological, reflexive and ethical issues involved in research
3. Synthesis and evaluation
 - Evaluate psychological theories and empirical studies
 - Discuss how biological, cognitive and sociocultural levels of analysis can be used to explain behaviour
 - Evaluate research methods used to investigate behaviour
4. Selection and use of skills appropriate to psychology
 - Demonstrate the acquisition of knowledge and skills required for experimental design, data collection and presentation, data analysis and interpretation
 - At HL only, analyse data using an appropriate inferential statistical test
 - Write an organized response

Psychology Standard Level (Total: 150 hours during the two years)

Syllabus content	<p>Part 1: Core (SL/HL) (90 hours)</p> <ul style="list-style-type: none"> • The biological level of analysis • The cognitive level of analysis • The sociocultural level of analysis <p>Part 2: Options (SL/HL) (30 hours)</p> <ul style="list-style-type: none"> • Abnormal psychology • Developmental psychology • Health psychology • Psychology of human relationships • Sport psychology <p>Students at SL must study one option.</p> <p>Part 3: Simple experimental study (SL/HL) (30 hours)</p> <ul style="list-style-type: none"> • Introduction to experimental research methodology
Internal assessment	<p>A report of a simple experimental study conducted by the student. (20 marks)</p> <p>SL students plan, undertake and report a replication of a simple experimental study.</p> <p>This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.</p> <p>25% of the final mark</p>
External assessment	<p>Paper 1 (2 hours)</p> <p>Section A: Three compulsory questions on part 1 of the syllabus.</p> <p>Section B: Three questions on part 1 of the syllabus. Students choose one question to answer in essay form.</p> <p>(46 marks)</p> <p>50% of the final mark</p> <p>Paper 2 (1 hour)</p> <p>Fifteen questions on part 2 of the syllabus. Students choose one question to answer in essay form.</p> <p>(22 marks)</p> <p>25% of the total mark</p>

GROUP 4

Aims

Through studying biology, chemistry or physics, students should become aware of how scientists work and communicate with each other. While the scientific method may take on a wide variety of forms, it is the emphasis on a practical approach through experimental work that characterizes these subjects.

The aims enable students, through the overarching theme of the nature of science, to:

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

Biology

The subject **Biology** requires an understanding of the fundamental concepts of life as well as knowledge of how the different living organisms operate at different levels (from the molecular level to the biosphere).

The Diploma Programme **Biology** 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
- promotes thinking about international dimensions of different issues

Biological thinking involves the ability to:

- think procedurally, logically, concurrently, abstractly, recursively and think ahead
- utilize an experimental and inquiry-based approach to problem-solving

Biology Standard Level (Total: 150 hours during the two years)

Core syllabus content	<p>The topics that must be studied are:</p> <ul style="list-style-type: none"> • Topic 1: Cell Biology (15 hours) • Topic 2: Molecular Biology (21 hours) • Topic 3: Genetics (15 hours) • Topic 4: Ecology (12 hours) * Topic 5: Evolution and Biodiversity (12 hours) * Topic 6: Human physiology (20 hours) <p style="text-align: right;">Total 95 hours</p>
Options	<p>Students study one of the following options (15 hours):</p> <p>Option A: Neurobiology and Behaviour Option B: Biotechnology and Bioinformatics Option C: Ecology and Conservation Option D: Human physiology</p>
Internal assessment	<p>Solution: Practical application of skills through the lab works (40 hours) Practical activities: labs, experiments, field trip (20 hours) Participation in the Group 4 project (10 hours) Individual Investigation (IA) (10 hours) 20% of the final mark</p>
External assessment	<p>Paper 1 (45 minutes) Marks: 30</p> <ul style="list-style-type: none"> • 30 multiple-choice questions on core material, about 15 of which are common with HL. <p>20% of the final mark</p> <p>Paper 2 (75 minutes) Marks: 50</p> <ul style="list-style-type: none"> • Data-based question. • Short-answer and extended-response questions on core material. • One out of two extended response questions to be attempted by candidates. <p>40% of the final mark</p> <p>Paper 3 (60 minutes) Marks: 35</p> <ul style="list-style-type: none"> • This paper will have questions on core and SL option material. • 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. <p>20% of the final mark</p> <p>Calculators: The use of calculators is not permitted in Paper 1, but it is allowed in Paper 2 and Paper 3.</p>

Biology Higher Level (Total: 240 hours during the two years)

Core syllabus content	<p>The topics that must be studied are:</p> <ul style="list-style-type: none"> • Topic 1: Cell Biology (15 hours) • Topic 2: Molecular Biology (21 hours) • Topic 3: Genetics (15 hours) • Topic 4: Ecology (12 hours) • Topic 5: Evolution and Biodiversity (12 hours) • Topic 6: Human physiology (20 hours) <p style="text-align: right;">Total 95 hours</p>
Additional higher level (AHL)	<ul style="list-style-type: none"> • Topic 7. Nucleic acids (9 hours) • Topic 8. Metabolism, cell respiration and photosynthesis (14 hours) • Topic 9. Plant biology (13 hours) • Topic 10. Genetics and evolution (8 hours) • Topic 11. Animal physiology (16 hours) <p style="text-align: right;">Total 60 hours</p>
Options	<p>Students study one of the following options (25 hours):</p> <p>Option A: Neurobiology and Behaviour Option B: Biotechnology and Bioinformatics Option C: Ecology and Conservation Option D: Human physiology</p>
Internal assessment	<p>Solution: Practical application of skills through the lab works (60 hours) Practical activities: labs, experiments, field trip (40 hours) Participation in the Group 4 project (10 hours) Individual Investigation (IA) (10 hours) 20% of the final mark</p>
External assessment	<p>Paper 1 (60 minutes) Marks: 40 • 40 multiple-choice questions on core and AHL material, about 15 of which are common with SL. 20% of the final mark</p> <p>Paper 2 (135 minutes) Marks: 72 • 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. 36% of the final mark</p> <p>Paper 3 (75 minutes) Marks: 45 • 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. 24% of the final mark</p> <p>Calculators: The use of calculators is not permitted in Paper 1, but it is allowed in Paper 2 and Paper 3..</p>

Chemistry

Chemistry is an experimental science that combines academic study with the acquisition of practical and investigational skills. Chemical principles underpin both the physical environment in which we live and all biological systems. Chemistry is often a prerequisite for many other courses in higher education, such as medicine, biological science and environmental science.

Both theory and practical work should be undertaken by all students as they complement one another naturally, both in school and in the wider scientific community. The DP chemistry course allows students to develop a wide range of practical skills and to increase facility in the use of mathematics. It also allows students to develop interpersonal and information technology skills, which are essential to life in the 21st century.

By studying chemistry students should become aware of how scientists work and communicate with each other. While the scientific method may take on a wide variety of forms, it is the emphasis on a practical approach through experimental work that characterizes the subject.

Teachers provide students with opportunities to develop manipulative skills, design investigations, collect data, analyse results and evaluate and communicate their findings.

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.

Chemistry Standard Level (Total: 150 hours during the two years)

Core syllabus content	(95 hours) 1. Stoichiometric relationships 2. Atomic structure 3. Periodicity 4. Chemical bonding and structure 5. Energetics/thermochemistry 6. Chemical kinetics 7. Equilibrium 8. Acids and bases 9. Redox processes 10. Organic chemistry 11. Measurement and data processing
Options	Students study one of the following options (15 hours): A. Materials B. Biochemistry C. Energy D. Medicinal chemistry
Practical scheme of work	(40 hours) Prescribed and other practical activities Individual investigation (internally assessed) Group 4 project
Internal assessment	Individual investigation (10 hours) Investigation and write-up of 6 to 12 pages 20% of the final mark
External assessment	Paper 1 (0.75 hour) Paper 1 is an examination paper containing 30 multiple-choice questions on core, about 15 of which are common with HL. <ul style="list-style-type: none"> • The use of calculators is not permitted. • Students will be provided with a periodic table. 20% of the final mark Paper 2 (1.25 hour) Paper 2 is an examination paper containing short-answer and extended-response questions on core material. <ul style="list-style-type: none"> • The use of calculators is permitted. • A chemistry data booklet is to be provided by the school. 40% of the final mark Paper 3 (1 hour) Paper 3 is an examination paper consisting of two sections with questions on core and SL option material. <ul style="list-style-type: none"> • 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. • The use of calculators is permitted. • A chemistry data booklet is to be provided by the school. 20% of the final mark

Chemistry Higher Level (Total: 240 hours during the two years)

Core syllabus content	(95 hours) 1. Stoichiometric relationships 2. Atomic structure 3. Periodicity 4. Chemical bonding and structure 5. Energetics/thermochemistry 6. Chemical kinetics 7. Equilibrium 8. Acids and bases 9. Redox processes 10. Organic chemistry 11. Measurement and data processing
Additional Higher Level syllabus content (AHL)	(60 hours) 12. Atomic structure 13. The periodic table—the transition metals 14. Chemical bonding and structure 15. Energetics/thermochemistry 16. Chemical kinetics 17. Equilibrium 18. Acids and bases 19. Redox processes 20. Organic chemistry 21. Measurement and analysis
Options	Students study one of the following options (25 hours): A. Materials B. Biochemistry C. Energy D. Medicinal chemistry
Practical scheme of work	(40 hours) Prescribed and other practical activities Individual investigation (internally assessed) Group 4 project
Internal assessment	Individual investigation (10 hours) Investigation and write-up of 6 to 12 pages 20% of the final mark
External assessment	Paper 1 (1 hour) Paper 1 is an examination paper containing 40 multiple-choice questions on core, about 15 of which are common with SL. • The use of calculators is not permitted. • Students will be provided with a periodic table. 20% of the final mark Paper 2 (2.25 hour) Paper 2 is an examination paper containing short-answer and extended-response questions on core and AHL material. • The use of calculators is permitted. • A chemistry data booklet is to be provided by the school. 36% of the final mark Paper 3 (1.25 hour) Paper 3 is an examination paper consisting of two sections with questions on core, AHL and HL 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. • The use of calculators is permitted. • A chemistry data booklet is to be provided by the school. 24% of the final mark

Physics

In physics at each level, both theory and experiments are undertaken by all students. They 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.

Physics Standard Level (Total: 150 hours during the two years)

Core syllabus content	<p>The topics that must be studied are:</p> <ul style="list-style-type: none"> • Topic 1: Measurements and uncertainties (5 hours) • Topic 2: Mechanics (22 hours) • Topic 3: Thermal physics (11 hours) • Topic 4: Waves (15 hours) • Topic 5: Electricity and magnetism (15 hours) • Topic 6: Circular motion and gravitation (5 hours) • Topic 7: Atomic, nuclear and particle physics (14 hours) • Topic 8: Energy production (8 hours) <p>Practical application of skills in implementing and documenting experimental work, across the syllabus (30 hours)</p> <p>This includes participation in the the Group 4 project (10 hours)</p>
Options	<p>Students study one of the following options (15 hours):</p> <p>Option A: Relativity Option B: Engineering physics Option C: Imaging Option D: Astrophysics</p>
Internal assessment	<p>Solution: One piece of work (the Investigation) that enables students to demonstrate the application of their skills and knowledge, and to pursue their personal interests. Assessed against given criteria.</p> <p>20% of the final mark</p>
External assessment	<p>Paper 1 (45 minutes) 30 multiple-choice questions on core, about 15 of which are common with the higher-level paper. 20% of the final mark</p> <p>Paper 2 (1 hour 15 minutes) Short-answer questions and extended-response questions on core material. 40% of the final mark</p> <p>Paper 2 (1 hour) This paper will have questions on core and standard-level option material, in two sections:</p> <ul style="list-style-type: none"> • 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. <p>20% of the final mark</p> <p>Calculators: The use of calculators is not permitted in Paper 1. The use of calculators is permitted in Papers 2 and 3.</p>

Physics Higher Level (Total: 240 hours during the two years)

Additional higher-level syllabus content	<p>The topics that must be studied, in addition to the core (standard-level) topics are:</p> <ul style="list-style-type: none"> • Topic 9: Wave phenomena (17 hours) • Topic 10: Fields (11 hours) • Topic 11: Electromagnetic induction (16 hours) • Topic 12: Quantum and nuclear physics (16 hours) <p>Practical application of skills in implementing and documenting experimental work, across the syllabus (50 hours)</p> <p>This includes participation in the the Group 4 project (10 hours)</p>
Options	<p>Students study one of the following options (25 hours):</p> <p>Option A: Relativity Option B: Engineering physics Option C: Imaging Option D: Astrophysics</p>
Internal assessment	<p>Solution: One piece of work (the Investigation) that enables students to demonstrate the application of their skills and knowledge, and to pursue their personal interests. Assessed against given criteria.</p> <p>20% of the final mark</p>
External assessment	<p>Paper 1 (1 hour) 40 multiple-choice questions on core, about 15 of which are common with the standard-level paper. 20% of the final mark</p> <p>Paper 2 (1 hour 15 minutes) Short-answer questions and extended-response questions on core and additional higher-level material. 36% of the final mark</p> <p>Paper 2 (1 hour) This paper will have questions on core, additional higher-level and option material, in two sections:</p> <ul style="list-style-type: none"> • 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. <p>24% of the final mark</p> <p>Calculators: The use of calculators is not permitted in Paper 1. The use of calculators is permitted in Papers 2 and 3.</p>

Computer Science

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.

Subject aims

Diploma Programme computer science students should become aware of how computer scientists work and communicate with each other and with other stakeholders in the successful development and implementation of IT solutions. While the methodology used to solve problems in computer science may take a wide variety of forms, the group 4 computer science course emphasizes the need for both a theoretical and practical approach. It is in this context that the Diploma Programme computer science course should aim to:

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

Computer Science Standard Level (Total: 150 hours during the two years)

Core syllabus content	<p>The topics that must be studied, including some practical work, are:</p> <ul style="list-style-type: none"> • 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)
Options	<p>Students study one of the following options (30 hours):</p> <p>Option A: Databases Option B: Modelling and simulation Option C: Web science Option D: Object-oriented programming (OOP)</p>
Internal assessment	<p>Solution: Practical application of skills through the development of a product and associated documentation (30 hours) Participation in the Group 4 project (10 hours) 30% of the final mark</p>
External assessment	<p>Paper 1 (1 hour 30 minutes) Paper 1 is an examination paper consisting of two compulsory sections.</p> <ul style="list-style-type: none"> • Section A (30 minutes approximately) consists of several compulsory short answer questions. • Section B (60 minutes approximately) consists of three compulsory structured questions. <p>45% of the final mark</p> <p>Paper 2 (1 hour) Paper 2 is an examination paper linked to the option studied. The paper consists of between two and five compulsory questions. 25% of the final mark</p> <p>Calculators: The use of calculators is not permitted in any computer science examination.</p>

Computer Science Higher Level (Total: 240 hours during the two years)

Core syllabus content	<p>The topics that must be studied, including some practical work, are:</p> <ul style="list-style-type: none"> • 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) • Topic 5: Abstract data structures (23 hours) • Topic 6: Resource management (8 hours) • Topic 7: Control (14 hours) <p>Case study Additional subject content introduced by the annually issued case study (30 hours)</p>
Options	<p>Students study one of the following options (45 hours):</p> <p>Option A: Databases Option B: Modelling and simulation Option C: Web science Option D: Object-oriented programming (OOP)</p>
Internal assessment	<p>Solution: Practical application of skills through the development of a product and associated documentation (30 hours) Participation in the Group 4 project (10 hours) 20% of the final mark</p>
External assessment	<p>Paper 1 (2 hours 10 minutes) Paper 1 is an examination paper consisting of two compulsory sections.</p> <ul style="list-style-type: none"> • Section A (30 minutes approximately) consists of several compulsory short answer questions. • Section B (100 minutes approximately) consists of five compulsory structured questions. <p>40% of the final mark</p> <p>Paper 2 (1 hour 20 minutes) Paper 2 is an examination paper linked to the option studied. The paper consists of between three and seven compulsory questions. 20% of the final mark</p> <p>Paper 3 (1 hour) Paper 3 is an examination paper of 1 hour consisting of four compulsory questions based on a pre-seen case study. 20% of the final mark</p> <p>Calculators: The use of calculators is not permitted in any computer science examination.</p>

GROUP 5

Mathematics

Having followed any one of the mathematics courses in group 5, students are expected to know and use mathematical concepts and principles. In particular, students must be able to:

- read, interpret and solve a given problem using appropriate mathematical terms
- organize and present information and data in tabular, graphical and/or diagrammatic forms
- demonstrate an understanding of both the significance and the reasonableness of results
- recognize patterns and structures in a variety of situations, and make generalizations
- use appropriate technological devices as mathematical tools
- demonstrate an understanding of and the appropriate use of mathematical modelling.

During the course the student will:

- develop an understanding of the principles and nature of mathematics
- communicate clearly and confidently in a variety of contexts
- develop logical, critical and creative thinking, and patience and persistence in problem-solving
- appreciate how developments in technology and mathematics have influenced each other
- appreciate the moral, social and ethical implications arising from the work of mathematicians and the applications of mathematics
- appreciate the international dimension in mathematics through an awareness of the universality of mathematics and its multicultural and historical perspectives
- appreciate the contribution of mathematics to other disciplines, and as a particular “area of knowledge” in the TOK course.

Mathematics Standard Level (Total: 150 hours during the two years)

Core syllabus content	The topics that must be studied are: <ul style="list-style-type: none">• Topic 1: Algebra (9 hours)• Topic 2: Functions and equations (24 hours)• Topic 3: Circular functions and trigonometry (16 hours)• Topic 4: Vectors (16 hours)• Topic 5: Statistics and probability (35 hours)• Topic 6: Calculus (40 hours)
Internal assessment	Individual exploration. This is a piece of written work that involves investigating an area of mathematics. (10 hours) 20% of the final mark
External assessment	Paper 1 (1 hour 30 minutes) This paper consists of section A, short-response questions, and section B, extended-response questions. Knowledge of all topics is required for this paper. However, not all topics are necessarily assessed in every examination session. 40% of the final mark Paper 2 (1 hour 30 minutes) This paper consists of section A, short-response questions, and section B, extended-response questions. Knowledge of all topics is required for this paper. However, not all topics are necessarily assessed in every examination session. 40% of the final mark Calculators: The use of calculators is not permitted in paper 1.

Mathematics Higher Level (Total: 240 hours during the two years)

Core syllabus content	<p>The topics that must be studied are:</p> <ul style="list-style-type: none"> • Topic 1: Algebra (30 hours) • Topic 2: Functions and equations (22 hours) • Topic 3: Circular functions and trigonometry (22 hours) • Topic 4: Vectors (24 hours) • Topic 5: Statistics and probability (36 hours) • Topic 6: Calculus (48 hours)
Options	<p>Students study one of the following options (48 hours):</p> <p>Option A: Statistics and probability Option B: Sets, relations and groups Option C: Calculus Option D: Discrete mathematics</p>
Internal assessment	<p>Individual exploration. This is a piece of written work that involves investigating an area of mathematics. (10 hours)</p> <p>20% of the final mark</p>
External assessment	<p>Paper 1 (2 hours) This paper consists of section A, short-response questions, and section B, extended-response questions. Knowledge of all core topics is required for this paper. However, not all topics are necessarily assessed in every examination session. 30% of the final mark</p> <p>Paper 2 (2 hours) This paper consists of section A, short-response questions, and section B, extended-response questions. Knowledge of all core topics is required for this paper. However, not all topics are necessarily assessed in every examination session. 30% of the final mark</p> <p>Paper 3 (1 hour) This paper consists of a small number of compulsory extended-response questions based on the option chosen. Where possible, the first part of each question will be on core material leading to the option topic. When this is not readily achievable, as, for example, with the discrete mathematics option, the level of difficulty of the earlier part of a question will be comparable to that of the core questions. Students must answer all questions. Knowledge of the entire content of the option studied, as well as the core material, is required for this paper. 20% of the final mark</p> <p>Calculators: The use of calculators is not permitted in paper 1</p>

SOURCES

1. International Baccalaureate: Creativity, Activity, Service guide (for students graduating in 2017 or after)
2. International Baccalaureate Diploma Programme: Theory of Knowledge guide (first assessment 2015)
3. Theory of Knowledge Teacher Support Material (first assessment 2015)
4. International Baccalaureate Diploma Programme: Extended essay guide (first exams 2013)
5. International Baccalaureate Diploma Programme: Language A: Literature guide (first examinations 2015)
6. International Baccalaureate Diploma Programme: Language A: Language and Literature guide (first examinations 2015)
7. International Baccalaureate Diploma Programme: Language B guide (first examinations 2015)
8. International Baccalaureate Diploma Programme: History guide (first examinations 2017)
9. International Baccalaureate Diploma Programme: Economics guide (first examinations 2013)
10. International Baccalaureate Diploma Programme: Psychology guide (first examinations 2011)
11. International Baccalaureate Diploma Programme: Biology guide (first examinations 2016)
12. International Baccalaureate Diploma Programme: Chemistry guide (first examinations 2016)
13. International Baccalaureate Diploma Programme Subject Brief, Sciences: Chemistry
14. International Baccalaureate Diploma Programme: Physics guide (first examinations 2016)
15. International Baccalaureate Diploma Programme: Computer Science guide (first examinations 2014)
16. International Baccalaureate Diploma Programme: Mathematics guide (first examinations 2014)