



MERCEDES  
COLLEGE

*Unlocking Life Potential.*

# INTERNATIONAL BACCALAUREATE

## DIPLOMA PROGRAMME

# Curriculum Handbook

2012



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# IB mission statement

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

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

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

## The IB Learner Profile

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

IB learners strive to be:

- |                      |   |
|----------------------|---|
| <b>Inquirers</b>     | They develop their natural curiosity. They acquire the skills necessary to conduct inquiry and research and show independence in learning. They actively enjoy learning and this love of learning will be sustained throughout their lives.   |
| <b>Knowledgeable</b> | They explore concepts, ideas and issues that have local and global significance. In so doing, they acquire in-depth knowledge and develop understanding across a broad and balanced range of disciplines.   |
| <b>Thinkers</b>      | They exercise initiative in applying thinking skills critically and creatively to recognize and approach complex problems, and make reasoned, ethical decisions.  |
| <b>Communicators</b> | They understand and express ideas and information confidently and creatively in more than one language and in a variety of modes of communication. They work effectively and willingly in collaboration with others.  |
| <b>Principled</b>    | They act with integrity and honesty, with a strong sense of fairness, justice and respect for the dignity of the individual, groups and communities. They take responsibility for their own actions and the consequences that accompany them.   |
| <b>Open-minded</b>   | They understand and appreciate their own cultures and personal histories, and are open to the perspectives, values and traditions of other individuals and communities. They are accustomed to seeking and evaluating a range of points of view, and are willing to grow from the experience. |
| <b>Caring</b>        | They show empathy, compassion and respect towards the needs and feelings of others. They have a personal commitment to service, and act to make a positive difference to the lives of others and to the environment.  |
| <b>Risk-takers</b>   | They approach unfamiliar situations and uncertainty with courage and forethought, and have the independence of spirit to explore new roles, ideas and strategies. They are brave and articulate in defending their beliefs.   |
| <b>Balanced</b>      | They understand the importance of intellectual, physical and emotional balance to achieve personal well-being for themselves and others.  |
| <b>Reflective</b>    | They give thoughtful consideration to their own learning and experience. They are able to assess and understand their strengths and limitations in order to support their learning and personal development.  |

# The aims of the 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.

Mercedes College sees the implementation of the International Baccalaureate Diploma Programme as a means of achieving a number of goals:

- To further the International scope of the school and its community.
- To encourage the pursuit of academic excellence through a demanding broad educational programme.
- To participate in a course which encourages students to recognise that they are part of a total world community.
- To facilitate student mobility between countries.
- To provide professional development opportunities for teachers.

## Who is the IB Diploma for?

Obviously, access to universities throughout the world is a major attraction of the IB Diploma, both for families of international business people and diplomats, and for local students who, realistically or not, are drawn by the prospect of overseas tertiary study.

Many students who undertake the IB Diploma course at Mercedes, however, do not wish to study overseas. Instead they are attracted by the intrinsic qualities of the IB Diploma curriculum itself and how well it prepares them for University studies.

Features which past students have expressly valued include:

- its academic rigour;
- its breadth and balance;
- its emphasis upon learning to think for oneself; and
- the development of the skills of individual research and self-directed, efficient study, which has subsequently been found to be so important at university.

Although the IB Diploma course successfully challenges able students, it has far wider appeal. Anyone who has a reasonable chance of ultimately being able to cope with University study can also cope with the IB Diploma. This is a course which is suitable for any student who intends doing tertiary study and who has developed an interest in learning and a self-motivated approach for study.

## IB Diploma structure at Mercedes

Although students will select either the IB Diploma or SACE at the beginning of Year 11, all students will meet the criteria necessary to complete Stage 1 of their SACE Certificate. In this way, an IB student may transfer to SACE if the pressure of work becomes too great or if any other difficulties are encountered. In some Year 11 classes there will be a mixture of IB Diploma and SACE students and a similar curriculum is followed.

In Year 12, however, the two courses diverge. After the start of Year 12 IB Diploma students will be committed to the course and will not be able to transfer to SACE. At this point, separate IB Diploma classes will operate in most subject areas.

Mercedes IB Diploma students will sit for their exams in the November of Year 12 at the same time as SACE students. In this way, IB Diploma students will be able to begin University at the same time as SACE students.

## Cost

The IB Diploma is an expensive course to offer and requires a high commitment from school, staff and students. The school believes that the benefits to the school and the student body far outweigh the cost. As a result, students are not expected to meet the additional charges associated with membership and implementation of the IB Diploma course.

Students and their families will, however, be expected to pay for the student's annual registration and examination fees. A scale of fees is available on request from the IB Diploma Coordinator. Fees quoted are subject to review and change at any time.

# The Diploma Programme hexagon

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.

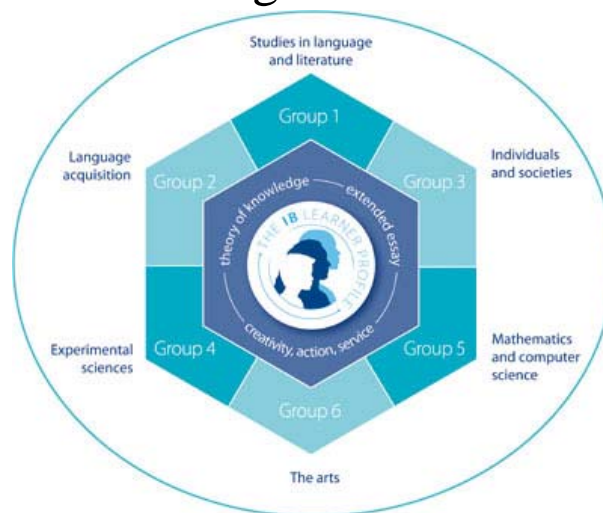


Figure 1 - Diploma Programme model

## Choosing the right combination

Students are required to choose one subject from each of the six academic areas, although they can choose a second subject from groups 1 to 5 instead of a group 6 subject.

### **GROUP 1: Studies in Language and Literature**

**A first modern language: Language A** (usually a student's native language).

Subjects offered at Mercedes are English A and Chinese A. Other Language A courses may be available through external bodies such as the School of Languages.

This course is based upon a study of the literature of that language, but also includes works translated from another language designed to expose students to cultural bases other than their own.

### **GROUP 2: Language Acquisition**

**A second modern language: Language B or Language ab initio.**

Languages offered at Mercedes are English B, French B, Indonesian B and Spanish *ab initio*.

The Language B courses are intended for students with several years' prior study of the language, and it emphasises the acquisition and development of the language skills of listening, speaking, reading and writing. These are taught through the study of a wide range of oral and written texts, including some formal literature.

The Language *ab initio* course is intended for students with no formal background in the language.

### **GROUP 3: Individuals and Societies**

Students select one of Business & Management, History, Economics or Psychology.

### **GROUP 4: Experimental Sciences**

Students select one of Biology, Chemistry, Physics.

### **GROUP 5: Mathematics**

Students select one of Mathematics HL, Mathematics SL or Mathematical Studies SL

### **GROUP 6: The Arts**

Students select one of the following options:

- a. Art/Design, Theatre or Music
- b. A second selection from Groups 1 - 4

**Note that subjects available for each group may change depending on demand**

# The core of the hexagon

All Diploma Programme students participate in the three course requirements that make up the core of the hexagon. Reflection on all these activities is a principle that lies at the heart of the thinking behind the Diploma Programme.

The theory of knowledge course encourages students to think about the nature of knowledge, to reflect on the process of learning in all the subjects they study as part of their Diploma Programme course, and to make connections across the academic areas.

The extended essay, a substantial piece of writing of up to 4,000 words, enables students to investigate a topic of special interest that they have chosen themselves. It also encourages them to develop the skills of independent research that will be expected at university.

Creativity, action, service involves students in experiential learning through a range of artistic, sporting, physical and service activities.

## A. THE EXTENDED ESSAY

In their **Extended Essay**, which must be written as part of their Diploma course, students have a further opportunity to carry out in-depth, very closely focused study, within one of their subjects.

As can be readily appreciated, most students find the prospect of a 4000 word 'mini-thesis' somewhat daunting and the writing process can be traumatic for students, parents and teachers alike. Once it is finished, however, most regard it as a major highlight of their secondary education and are justifiably proud to show it to one and all.

The Extended Essay is assessed externally, using clearly specified criteria.

### The Nature of the Extended Essay

The Extended Essay is defined as an in-depth study of a limited topic within a subject. Its purpose is to provide candidates with an opportunity to engage in independent research at an introductory level. Emphasis is placed on the process of engaging in personal research, on the communication of ideas and information in a logical and coherent manner, and on the overall presentation of the Extended Essay in compliance with these Guidelines. This emphasis is reflected in the relative weighting of 2:1 between the General and Subject Assessment Criteria.

The recommended length of time for candidates to spend on the preparation and writing of the Extended Essay is 40 hours. Students approach a staff member to act as their supervisor throughout the process.

### The Choice of Subject

The subject in which the Extended Essay is registered must be chosen from the list of available subjects given in the General Regulations.

It is advisable to choose the subject for the Extended Essay before deciding what the topic or research question of the Extended Essay will be. Since a limited range of subjects is available, certain topics may not be appropriate for an Extended Essay.

The subject chosen for the Extended Essay does not have to be one of the subjects being studied by the candidate for the Diploma, but care should be taken to choose a subject about which the candidate has sufficient knowledge and one that has an appropriate supervisor available at the College.

In choosing a subject an essential consideration is the personal interest of the candidate.

### The Choice of Topic

The topic of the Extended Essay is the particular area of study within the chosen subject.

Candidates should aim to choose a topic which is both interesting and original to them. The topic chosen should be limited in scope to allow candidates to analyse the topic in depth. A broad topic is unlikely to result in a successful Extended Essay.

An unsuitable topic is one which requires no personal research, is entirely dependent upon summarising secondary sources and/or requires an essentially narrative or descriptive approach.

The choice of topic should present the candidate with the opportunity to collect or generate information and/or data for analysis and evaluation.

Writing a précis of a well-documented topic is unlikely to result in a successful Extended Essay.

Candidates are not expected to make a contribution to knowledge within a subject.

## B. THEORY OF KNOWLEDGE (ToK)

### Introduction

Theory of Knowledge is central to the International Baccalaureate Diploma programme of studies. It may be seen as a matrix in which the distinct forms of knowledge specific to the subjects which comprise the IB curriculum can be critically evaluated, compared and contrasted, and, to an appropriate degree, integrated.

### Nature of the Subject

It is a commonplace to say that the world has experienced a digital revolution and that we are now part of a global information economy. The extent and impact of the changes signalled by such grand phrases vary greatly in different parts of the world, but their implications for knowledge are profound.

Reflection on such huge cultural shifts is one part of what the TOK course is about. Its context is a world immeasurably different from that inhabited by “renaissance man”. Knowledge may indeed be said to have exploded: it has not only expanded massively but also become increasingly specialized, or fragmented. At the same time, discoveries in the 20th century (quantum mechanics, chaos theory) have demonstrated that there are things that it is impossible for us to know or predict.

The TOK course, a flagship element in the Diploma Programme, encourages critical thinking about knowledge itself, to try to help young people make sense of what they encounter. Its core content is questions like these: What counts as knowledge? How does it grow? What are its limits? Who owns knowledge? What is the value of knowledge? What are the implications of having, or not having, knowledge?

What makes TOK unique, and distinctively different from standard academic disciplines, is its process. At the centre of the course is the student as **knower**. Students entering the Diploma Programme typically have 16 years of life experience and more than 10 years of formal education behind them. They have accumulated a vast amount of knowledge, beliefs and opinions from academic disciplines and their lives outside the classroom. In TOK they have the opportunity to step back from this relentless acquisition of new knowledge, in order to consider knowledge issues. These include the questions already mentioned, viewed from the perspective of the student, but often begin from more basic ones, like: What do I claim to know [about X]? Am I justified in doing so [how?]? Such questions may initially seem abstract or theoretical, but TOK teachers bring them into closer focus by taking into account their students’ interests, circumstances and outlooks in planning the course.

TOK activities and discussions aim to help students discover and express their views on knowledge issues. The course encourages students to share ideas with others and to listen to and learn from what others think. In this process students’ thinking and their understanding of knowledge as a human construction are shaped, enriched and deepened. Connections may be made between knowledge encountered in different Diploma Programme subjects, in CAS experience or in extended essay research; distinctions between different kinds of knowledge may be clarified.

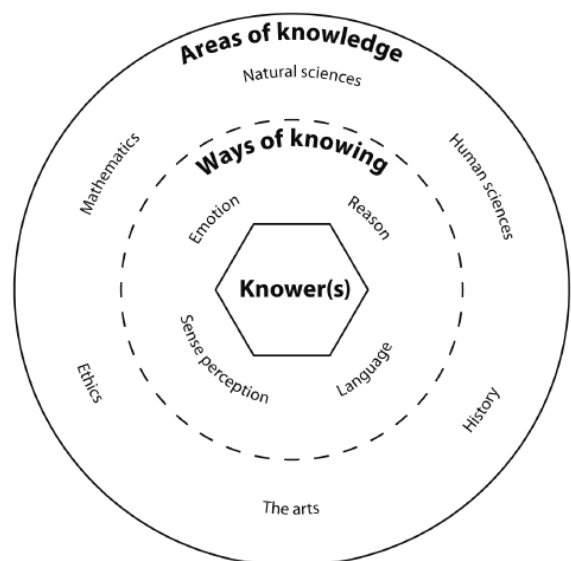
In many ways TOK is ideally placed to foster internationalism, in close harmony with the aims of the IB learner profile. The TOK aims embody many of the attributes needed by a citizen of the world: self-awareness; a reflective, critical approach; interest in other people’s points of view; and a sense of responsibility.

Global controversies often rest on significant knowledge issues that can provide useful starting points for TOK explorations, depending on students’ interests and awareness. TOK activity, in turn, can contribute significantly to the understanding of these large questions.

### Aims

The aims of the TOK course are to:

- develop a fascination with the richness of knowledge as a human endeavour, and an understanding of the empowerment that follows from reflecting upon it
- develop an awareness of how knowledge is constructed, critically examined, evaluated and renewed, by communities and individuals
- encourage students to reflect on their experiences as learners, in everyday life and in the Diploma Programme, and to make connections between academic disciplines and between thoughts, feelings and actions



- encourage an interest in the diversity of ways of thinking and ways of living of individuals and communities, and an awareness of personal and ideological assumptions, including participants' own
- encourage consideration of the responsibilities originating from the relationship between knowledge, the community and the individual as citizen of the world.

## Objectives

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

- analyse critically knowledge claims, their underlying assumptions and their implications
- generate questions, explanations, conjectures, hypotheses, alternative ideas and possible solutions in response to knowledge issues concerning areas of knowledge, ways of knowing and students' own experience as learners
- demonstrate an understanding of different perspectives on knowledge issues
- draw links and make effective comparisons between different approaches to knowledge issues that derive from areas of knowledge, ways of knowing, theoretical positions and cultural values
- demonstrate an ability to give a personal, self-aware response to a knowledge issue
- formulate and communicate ideas clearly with due regard for accuracy and academic honesty.

## Programme Outline

Part 1:	Knowledge Issues, Knowers and Knowing				
Part 2:	Ways of Knowing: How do I know?				
	Emotion	Reason	Perception	Language	
Part 3:	Areas of Knowledge: What do I know?				
	Mathematics	Natural Sciences	Human Sciences		
	History	The Arts	Ethics		
Part 4:	Linking Questions				
	Belief	Certainty	Culture	Evidence	
	Experience	Explanation	Interpretation	Intuition	
	Technology	Truth	Values		

## Assessment

The assessment model in theory of knowledge (TOK) comprises two components:

### Part 1 External assessment (40 points)

One essay (1,200–1,600 words) on a title chosen from a list of six titles prescribed by the IBO

### Part 2 Internal assessment (20 points)

One presentation to the class (approximately 10 minutes per student) including a written presentation planning document and presentation marking form detailing

- the knowledge issue that is the focus of the presentation
- a summary in note form of the knowledge issues to be treated during the presentation
- achievement levels for each of the four assessment criteria, briefly justified, from both student and teacher.

Points awarded for the externally assessed component, part 1, the essay on a prescribed title (40 points), and for the internally assessed component, part 2, the presentation (20 points), are combined to give a total out of 60.

The grade boundaries are then applied, to determine the band (A to E) to which the student's performance in TOK belongs.

The band descriptors are:

A	Work of an <b>excellent</b> standard
B	Work of a <b>good</b> standard
C	Work of a <b>satisfactory</b> standard
D	Work of a <b>mediocre</b> standard
E	Work of an <b>elementary</b> standard

## C. CREATIVITY, ACTION AND SERVICE (CAS)

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

**Creativity:** arts, and other experiences that involve creative thinking.

**Action:** physical exertion contributing to a healthy lifestyle, complementing academic work elsewhere in the Diploma Programme.

**Service:** an unpaid and voluntary exchange that has a learning benefit for the student. The rights, dignity and autonomy of all those involved are respected.

CAS enables students to enhance their personal and interpersonal development through experiential learning. At the same time, it provides an important counterbalance to the academic pressures of the rest of the Diploma Programme. A good CAS programme should be both challenging and enjoyable, a personal journey of self discovery. Each individual student has a different starting point, and therefore different goals and needs, but for many their CAS activities include experiences that are profound and life changing.

For student development to occur, CAS should involve:

- real, purposeful activities, with significant outcomes
- personal challenge—tasks must extend the student and be achievable in scope
- thoughtful consideration, such as planning, reviewing progress, reporting
- reflection on outcomes and personal learning.

All proposed CAS activities need to meet these four criteria. It is also essential that they do not replicate other parts of the student's Diploma Programme work.

Concurrency of learning is important in the Diploma Programme. Therefore, CAS activities should continue on a regular basis for as long as possible throughout the programme, and certainly for at least 18 months.

Successful completion of CAS is a requirement for the award of the IB diploma. CAS is not formally assessed but students need to document their activities and provide evidence that they have achieved eight key learning outcomes. The school's CAS programme is regularly monitored by the relevant regional office.

### Aims

Within the Diploma Programme, CAS provides the main opportunity to develop many of the attributes described in the IB learner profile. For this reason, the aims of CAS have been written in a form that highlights their connections with the IB learner profile.

The CAS programme aims to develop students who are:

- reflective thinkers—they understand their own strengths and limitations, identify goals and devise strategies for personal growth
- willing to accept new challenges and new roles
- aware of themselves as members of communities with responsibilities towards each other and the environment
- active participants in sustained, collaborative projects
- balanced—they enjoy and find significance in a range of activities involving intellectual, physical, creative and emotional experiences.

### Responsibilities of the student

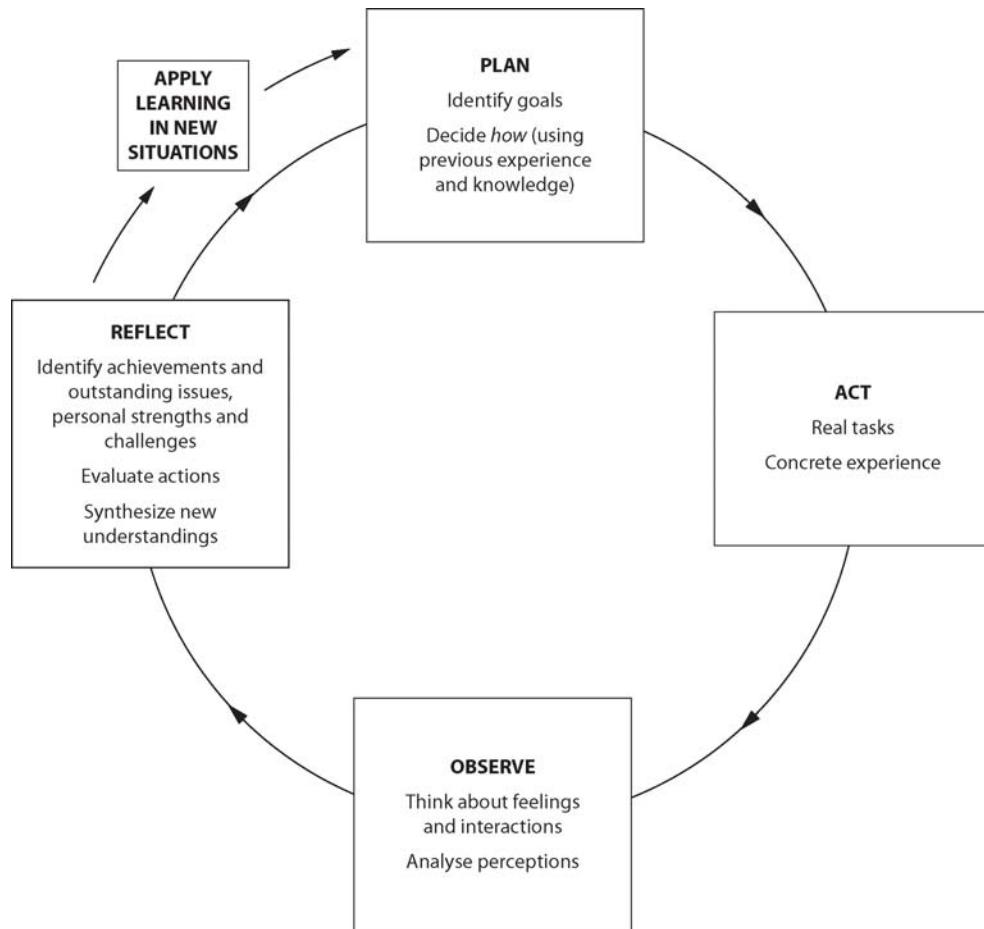
Students are required to:

- self review at the beginning of their CAS experience and set personal goals for what they hope to achieve through their CAS programme
- plan, do and reflect (plan activities, carry them out and reflect on what they have learned)
- undertake at least one interim review and a final review with their CAS adviser
- take part in a range of activities, including at least one project, some of which they have initiated themselves
- keep records of their activities and achievements, including a list of the principal activities undertaken
- show evidence of achievement of the eight CAS learning outcomes.

## Experiential learning

While different Diploma Programme subjects offer varying amounts of opportunity for experiential learning, it is at the very heart of CAS.

As the figure below indicates, experiential learning involves much more than just the activity itself: planning, acting, observing and reflecting are all crucial in making the experience as valuable as possible.



Among the benefits of experiential learning are the following. Students are enabled to:

- see the application of academic learning, social and personal skills to real life situations
- bring real benefits to self and/or others
- understand their own capacity to make a difference
- make decisions that have real, not hypothetical, results
- develop skills to solve problems
- develop a sense of responsibility and accountability for their actions.

## **Reflection, recording and reporting**

Students should document their CAS activities, noting in particular their reflections upon their experiences. It should not be assumed that it comes naturally. Just as the kind of reflection that a critic applies to a work of art or literature is something that develops with time and experience, so the kind of reflection appropriate in CAS is something that requires guidance and practice.

The fundamentals are simple. Of any activity, it is appropriate to ask the following questions.

- What did I plan to do?
- What did I do?
- What were the outcomes, for me, the team I was working with, and others?

The difficulty lies in the complexity of the possible answers.

Experiential learners might consider, where appropriate, for themselves and others, and for each stage of an activity (before, during and after):

- how they felt
- what they perceived
- what they thought about the activity
- what the activity meant to them
- what the value of the activity was
- what they learned from the activity and how this learning (for example, a change of perspective) might apply more widely.

## **Range and diversity of activities**

All students should be involved in CAS activities that they have initiated themselves.

Other CAS activities may be initiated by the school.

# Assessment

## FORMS OF ASSESSMENT

IB Diploma assessment is criterion referenced. Performance criteria are clearly set out for each assessment task in each subject, and the extent to which these criteria are met determines the grade awarded to each candidate. There is no attempt to impose pre-determined grade distributions upon raw examination scores, as often happens in other examination systems.

A range of different assessment instruments is used, including:

1. written examination (multiple choice, short answer and extended response papers are all used where appropriate, often within the one subject)
2. oral examinations (using visiting examiners, or tape recordings)
3. aural examinations (written responses to taped questions)
4. major assignments (such as the Works in Translation component of Language A:Literature and Guided Coursework in History)
5. teacher assessment of clearly defined aspects of class work (eg Practical work in the sciences).

The bulk of the assessment in all subjects is carried out by external examiners.

The panel of Chief Examiners consists of highly qualified and experienced senior secondary and tertiary educators, and they are supported by a large number of assistant examiners stationed throughout the world.

Wherever teachers have the responsibility for components of the assessment, consistency of standards is facilitated using carefully defined grade descriptors and appropriate moderation strategies.

Except in the case of language subjects, students must complete all assessment tasks in English.

## GRADING SCHEME

IB Diploma examinations in each subject are graded on a seven point scale, defined as follows:

1. very poor
2. poor
3. mediocre
4. satisfactory
5. good
6. very good
7. excellent

Theory of Knowledge and the Extended Essay are graded A to E based on band descriptors determined by achievements in assessment components.

Up to a maximum of 3 bonus points are awarded for exceptional achievement in the Extended Essay and Theory of Knowledge (see grid right).

		Theory of knowledge					
		Excellent A	Good B	Satisfactory C	Mediocre D	Elementary E	Not submitted
Extended essay	Excellent A	3	3	2	2	1 + Failing condition*	N
	Good B	3	2	1	1	Failing condition*	N
	Satisfactory C	2	1	1	0	Failing condition*	N
	Mediocre D	2	1	0	0	Failing condition*	N
	Elementary E	1 + Failing condition*	Failing condition*	Failing condition*	Failing condition*	Failing condition*	N
	Not submitted	N	N	N	N	N	N

A student who fails to submit a TOK essay, or who fails to make a presentation, will be awarded N for TOK, will score no points, and will not be awarded a diploma.

*\*28 points overall will be required to be eligible for the diploma if a student attains an "E" grade in either the extended essay or theory of knowledge. As previously, a grade "A" in one of the requirements earns an extra point even if the other is a grade "E". Attaining a grade "E" in both the extended essay and theory of knowledge continues to represent an automatic failure.*

## AWARDING OF THE DIPLOMA

A minimum of 24 points and maximum of 45 points are required for the awarding of the diploma. There are a number of conditions outlined in the General Regulations (2007), pages 4 to 5:

The IB diploma will be awarded to a candidate whose total score is **24, 25, 26 or 27 points**, provided all the following requirements have been met.

1. Numeric grades have been awarded in all six subjects registered for the IB diploma.
2. All CAS requirements have been met.
3. Grades A (highest) to E (lowest) have been awarded for both theory of knowledge and an extended essay, with a grade of at least D in one of them.
4. There is no grade 1 in any subject.
5. There is no grade 2 at higher level.
6. There is no more than one grade 2 at standard level.
7. Overall, there are no more than three grades 3 or below.
8. At least 12 points have been gained on higher level subjects (candidates who register for four higher level subjects must gain at least 16 points at higher level).
9. At least 9 points have been gained on standard level subjects (candidates who register for two standard level subjects must gain at least 6 points at standard level).
10. The final award committee has not judged the candidate to be guilty of malpractice.

The IB diploma will be awarded to a candidate whose total score is **28 points or above**, provided all the following requirements have been met.

- a. Numeric grades have been awarded in all six subjects registered for the IB diploma.
- b. All CAS requirements have been met.
- c. Grades A (highest) to E (lowest) have been awarded for both theory of knowledge and an extended essay, with a grade of at least D in one of them.
- d. There is no grade 1 in any subject.
- e. There is no more than one grade 2 at higher level.
- f. There are no more than two grades 2 at standard level.
- g. Overall, there are no more than three grades 3 or below.
- h. At least 11 points have been gained on higher level subjects (candidates who register for four higher level subjects must gain at least 14 points at higher level).
- i. At least 8 points have been gained on standard level subjects (candidates who register for two standard level subjects must gain at least 5 points at standard level).
- j. The final award committee has not judged the candidate to be guilty of malpractice.

**GROUP 1:**

**STUDIES IN  
LANGUAGE AND  
LITERATURE**

# LANGUAGE A: LITERATURE

For most of our students, Language A is English. Students from other language backgrounds such as Chinese would undertake Chinese A. Students from a French-speaking background may study French A with approval of the Coordinator. In some cases, students **may** study another Language A by arrangement.

The study of literature is the main focus of the Language A program. Language A is examined by the International Baccalaureate Organisation and is a two-year course of study.

## NATURE OF THE SUBJECT

The course is built on the assumption that literature is concerned with our conceptions, interpretations and experiences of the world. The study of literature can therefore be seen as an exploration of the way it represents the complex pursuits, anxieties, joys and fears to which human beings are exposed in the daily business of living. It enables an exploration of one of the more enduring fields of human creativity, and provides opportunities for encouraging independent, original, critical and clear thinking. It also promotes respect for the imagination and a perceptive approach to the understanding and interpretation of literary works.

Through the study of a wide range of literature, the language A: literature course encourages students to appreciate the artistry of literature and to develop an ability to reflect critically on their reading. Works are studied in their literary and cultural contexts, through close study of individual texts and passages, and by considering a range of critical approaches. In view of the international nature of the IB and its commitment to intercultural understanding, the language A: literature course does not limit the study of works to the products of one culture or the cultures covered by any one language. The study of works in translation is especially important in introducing students, through literature, to other cultural perspectives. The response to the study of literature is through oral and written communication, thus enabling students to develop and refine their command of language.

Language A: literature is a flexible course that allows teachers to choose works from prescribed lists of authors and to construct a course that suits the particular needs and interests of their students. It is divided into four parts, each with a particular focus:

**Part 1:** Works in Translation

**Part 2:** Detailed Study

**Part 3:** Literary Genres

**Part 4:** Options (in which works are freely chosen)

## LANGUAGE A: LITERATURE AIMS

The aims of Language A: literature at Standard Level and Higher Level are to:

1. introduce students to a range of texts from different periods, styles and genres
2. develop in students the ability to engage in close, detailed analysis of individual texts and make relevant connections
3. develop the students' powers of expression, both in oral and written communication
4. encourage students to recognize the importance of the contexts in which texts are written and received
5. encourage, through the study of texts, an appreciation of the different perspectives of people from other cultures, and how these perspectives construct meaning
6. encourage students to appreciate the formal, stylistic and aesthetic qualities of texts
7. promote in students an enjoyment of, and lifelong interest in, language and literature.
8. develop in students an understanding of the techniques involved in literary criticism
9. develop the students' ability to form independent literary judgments and to support those ideas.

## LINKS TO THE MIDDLE YEARS PROGRAMME

In the IB Middle Years Programme (MYP) language A provides a balance between language and literature where students develop an appreciation of the nature, power and beauty of language and literature, and of the many influences on language and literature globally. Language A courses develop linguistic and literary understanding and skills through the study of a broad range of genres and world literature, as well as language learning in context. The study of one or more languages A enables students to work towards their full linguistic potential. Gaining an understanding that language and literature are creative processes encourages the development of imagination and creativity through self-expression. The Diploma Programme language A: literature course builds on this foundation. While it is not a language acquisition course, it aims to ensure the continuing development of a student's powers of expression and understanding in a variety of language domains.

## SYLLABUS OUTLINE

Syllabus component	Teaching hours	
	SL	HL
<b>Part 1: Works in translation</b> SL: <b>Two</b> works HL: <b>Three</b> works All works are chosen from the titles in the prescribed literature in translation (PLT) list.	<b>40</b>	<b>65</b>
<b>Part 2: Detailed study</b> SL: <b>Two</b> works HL: <b>Three</b> works All works are chosen from the prescribed list of authors (PLA) for the language A being studied, each from a <b>different</b> genre.	<b>40</b>	<b>65</b>
<b>Part 3: Literary genres</b> SL: <b>Three</b> works HL: <b>Four</b> works All works are chosen from the prescribed list of authors (PLA) for the language A being studied, all from the <b>same</b> genre.	<b>40</b>	<b>65</b>
<b>Part 4: Options</b> SL: <b>Three</b> works HL: <b>Three</b> works Works are freely chosen in any combination.	<b>30</b>	<b>45</b>
<b>Total teaching hours</b>	<b>150</b>	<b>240</b>

## ASSESSMENT OBJECTIVES FOR LANGUAGE A: LITERATURE

### 1. Knowledge and understanding:

- Demonstrate knowledge and understanding of individual literary works as representatives of their genre and period, and the relationships between them
- Demonstrate an understanding of the ways in which cultural values are expressed in literature
- Demonstrate awareness of the significance of the context in which a work is written and received
- Substantiate and justify ideas with relevant examples

### 2. Analysis, synthesis and evaluation:

- Demonstrate an ability to analyse language, structure, technique and style, and evaluate their effects on the reader
- Demonstrate an ability to engage in independent literary criticism on both familiar and unfamiliar literary texts
- Show an ability to examine and discuss in depth the effects of literary techniques and the connections between style and meaning (**HL only**)

### 3. Selection and use of appropriate presentation and language skills

- Demonstrate an ability to express ideas clearly and fluently in both written and oral communication, with an effective choice of register and style
- Demonstrate a command of terminology and concepts appropriate to the study of literature
- Demonstrate an ability to express well-organized oral and written arguments
- Demonstrate an ability to write a sustained and detailed literary commentary (**HL only**)

<b>ASSESSMENT OUTLINE – STANDARD LEVEL</b>	
<b>Assessment component</b>	<b>Weighting</b>
<b><i>External assessment (3 hours)</i></b>	<b>70%</b>
<b>Paper 1: Guided literary analysis (1 hour 30 minutes)</b> 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 marks)	<b>20%</b>
<b>Paper 2: Essay (1 hour 30 minutes)</b> 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 marks)	<b>25%</b>
<b>Written assignment</b> Students submit a reflective statement and literary essay on one work studied in part 1. (25 marks) The reflective statement must be 300–400 words in length. The essay must be 1,200–1,500 words in length.	<b>25%</b>
<b><i>Internal assessment</i></b> This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.	<b>30%</b>
<b>Individual oral commentary (10 minutes)</b> Students present a formal oral commentary and answer subsequent questions on an extract from a work studied in part 2. (30 marks)	<b>15%</b>
<b>Individual oral presentation (10–15 minutes)</b> The presentation is based on works studied in part 4. It is internally assessed and externally moderated through the part 2 internal assessment task. (30 marks)	<b>15%</b>
<b>ASSESSMENT OUTLINE – HIGHER LEVEL</b>	
<b>Assessment component</b>	<b>Weighting</b>
<b><i>External assessment (4 hours)</i></b>	<b>70%</b>
<b>Paper 1: Literary commentary (2 hours)</b> The paper consists of two passages: one prose and one poetry. Students choose one and write a literary commentary. (20 marks)	<b>20%</b>
<b>Paper 2: Essay (2 hours)</b> 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 marks)	<b>25%</b>
<b>Written assignment</b> Students submit a reflective statement and literary essay on one work studied in part 1. (25 marks) The reflective statement must be 300–400 words in length. The essay must be 1,200–1,500 words in length.	<b>25%</b>
<b><i>Internal assessment</i></b> This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.	<b>30%</b>
<b>Individual oral commentary + discussion (20 minutes)</b> 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). (30 marks)	<b>15%</b>
<b>Individual oral presentation (10–15 minutes)</b> The presentation is based on works studied in part 4. It is internally assessed and externally moderated through the part 2 internal assessment task. (30 marks)	<b>15%</b>

# **GROUP 2:**

# **LANGUAGE ACQUISITION**

# LANGUAGE B :

## French, Indonesian, English

It is a requirement of the programme that students study at least one subject from group 2. The aim is to promote an understanding of another culture through the study of a second language. The main emphasis of the modern language courses is on language acquisition and use in a range of contexts and for different purposes. The two modern language courses—language *ab initio* and language B—develop students’ linguistic abilities through the development of receptive, productive and interactive skills. These two options are available to accommodate students with different backgrounds.

Language B is designed for students with some previous learning of that language. It may be studied at either SL or HL. The main focus of the course is on language acquisition and development of language skills.

### Links to the Middle Years Programme

The aims of the MYP language B and the Diploma Programme group 2 courses have much in common and share the intentions of encouraging students to develop an awareness and understanding of the perspectives of people from other cultures as well as harnessing linguistic competence.

### Group 2 aims

The aims of group 2 are to:

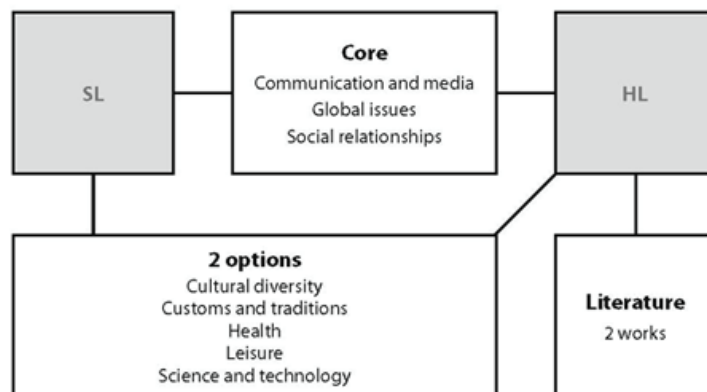
1. develop students’ intercultural understanding
2. enable students to understand and use the language they have studied in a range of contexts and for a variety of purposes
3. encourage, through the study of texts and through social interaction, an awareness and appreciation of the different perspectives 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.

### There are six assessment objectives for the language B course.

Students will be assessed on their ability to:

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

SL and HL are differentiated by the recommended number of teaching hours, the depth of syllabus coverage, the study of literature at HL, and the level of difficulty and demands of assessment and assessment criteria.



Assessment outline—SL

Assessment component	Weighting
External assessment	<b>70%</b>
<b>Paper 1 (1 hour 30 minutes): Receptive skills</b> Text-handling exercises on four written texts, based on the core.	25%
<b>Paper 2 (1 hour 30 minutes): Written productive skills</b> One writing exercise of 250–400 words from a choice of five, based on the options.	25%
<b>Written assignment: Receptive and written productive skills</b> Intertextual reading followed by a written exercise of 300–400 words plus a 100-word rationale, based on the core.	20%
Internal assessment <i>Internally assessed by the teacher and externally moderated by the IB.</i>	<b>30%</b>
<b>Individual oral (8–10 minutes)</b> Based on the options: 15 minutes' preparation time and a 10-minute (maximum) presentation and discussion with the teacher.	20%
<b>Interactive oral activity</b> Based on the core: Three classroom activities assessed by the teacher.	10%

Assessment outline—HL

Assessment component	Weighting
External assessment	<b>70%</b>
<b>Paper 1 (1 hour 30 minutes): Receptive skills</b> Text-handling exercises on five written texts, based on the core.	25%
<b>Paper 2 (1 hour 30 minutes): Written productive skills</b> 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%
<b>Written assignment: Receptive and written productive skills</b> Creative writing of 500–600 words plus a 150-word rationale, based on one of the literary texts read.	20%
Internal assessment <i>Internally assessed by the teacher and externally moderated by the IB.</i>	<b>30%</b>
<b>Individual oral (8–10 minutes)</b> Based on the options: 15 minutes' preparation time and a 10-minute (maximum) presentation and discussion with the teacher.	20%
<b>Interactive oral activity</b> Based on the core: Three classroom activities assessed by the teacher.	10%

Internal assessment is an integral part of the course and is compulsory for both SL and HL students. It enables students to demonstrate their ability in the application of interactive skills.

In language B students are required to participate in an individual oral and an interactive oral activity. This assessment is to be done during the second year of the course.

Individual oral	Linked to the options	20%
Interactive oral activity	Linked to the core	10%

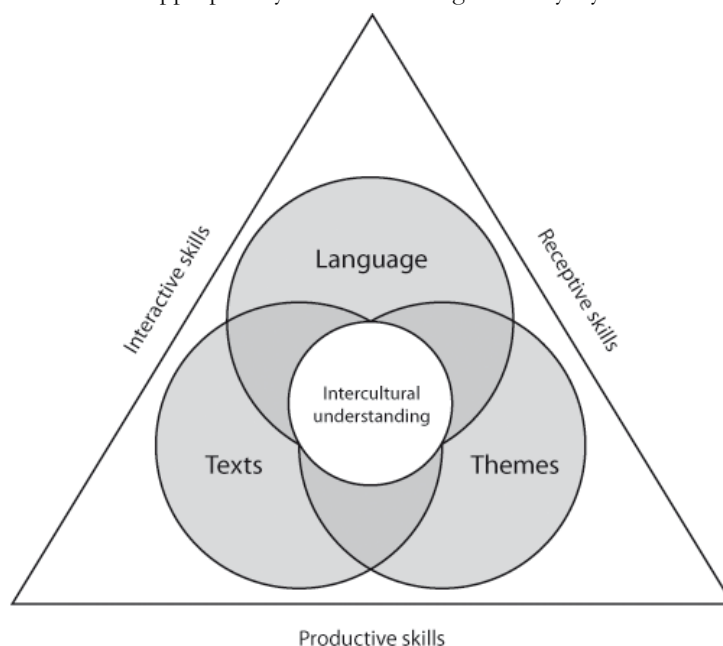
# LANGUAGE *AB INITIO*: SPANISH

**Language ab initio** courses are for beginners (that is, students who have no previous experience of learning the language they have chosen). This course is only available at standard level.

The language ab initio course is organized into three themes.

- Individual and society
- Leisure and work
- Urban and rural environment

Each theme has a list of topics that provide the students with opportunities to practise and explore the language as well as to develop intercultural understanding. Through the development of receptive, productive and interactive skills, students should be able to respond and interact appropriately in a defined range of everyday situations.



There are five assessment objectives for the language ab initio course. Students will be assessed on their ability to:

1. demonstrate an awareness and understanding of the intercultural elements related to the prescribed topics
2. communicate clearly and effectively in a range of situations
3. understand and use accurately the basic structures of the language
4. understand and use an appropriate range of vocabulary
5. use a register and a format that are appropriate to the situation.

## Prescribed topics

Individual and society	Leisure and work	Urban and rural environment
Daily routines	Employment	Environmental concerns
Education	Entertainment	Global issues
Food and drink	Holidays	Neighbourhood
Personal details, appearance and character	Media	Physical geography
Physical health	Sport	Town and services
Relationships	Technology	Weather
Shopping	Transport	

Assessment component	Weighting
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<p><b>External assessment</b></p> <p><b>Paper 1 (1 hour 30 minutes): Receptive skills</b>  Understanding of four written texts. (40 marks)  Text-handling exercises.</p> <p><b>Paper 2 (1 hour): Productive skills</b>  Two compulsory writing exercises. (25 marks)  Section A (7 marks): <b>One</b> question to be answered from a choice of two.  Section B (18 marks): <b>One</b> question to be answered from a choice of three.</p> <p><b>Written assignment (2 hours): Receptive and productive skills</b>  A piece of writing, 200–300 words, in the <b>target language</b> carried out in class under teacher supervision. (20 marks)</p>	<p><b>75%</b></p> <p><b>30%</b></p> <p><b>25%</b></p> <p><b>20%</b></p>
<p><b>Internal assessment</b> (10 minutes): Interactive skills  Individual oral (25 marks)  Three-part oral internally assessed by the teacher and externally moderated by the IB towards the end of the course.</p> <ul style="list-style-type: none"> <li>• Part 1: Presentation of a visual stimulus (from a choice of two) by the student</li> <li>• Part 2: Follow-up questions on the visual stimulus</li> <li>• Part 3: General conversation including at least two questions on the written assignment</li> </ul>	<p><b>25%</b></p>

# **GROUP 3: INDIVIDUALS and SOCIETIES**

# BUSINESS AND MANAGEMENT

## NATURE OF THE SUBJECT

Business and Management is the rigorous and critical study of the ways in which individuals and groups interact in a dynamic business environment. It is an academic discipline that examines how business decisions are made and how these decisions make an impact on internal and external environments. The ideals of international cooperation and responsible citizenship are at the heart of business and management.

The IBO Business and Management programme is designed to give students an understanding of business principles, practices and skills. Emphasis is also placed on understanding technical innovation and day-to-day business functions of marketing, human resource management and finance. However, a fundamental feature of the programme is the concept of synergy. In its technical sense, it is a concept that means an organisation should seek an overall return greater than the sum of its parts. Applied to the Business and Management programme, it necessitates a style of teaching and learning based on integrating and linking the various modules to give students, by the end of the course, a holistic overview.

Other characteristics of the Business and Management programme are that teaching and learning should include the application of tools and techniques of analysis to enhance the understanding of complex business activities. Students should also appreciate the ethical concerns and issues of social responsibility in the business environment. Finally, students should be able to make sense of the forces and circumstances that drive change in an interdependent and multicultural world. This should enable students to assimilate the principles of business and management and to become critical and effective participants in local and world affairs.

## AIMS

The aims of the Business and Management programme at Higher Level and Standard Level are to:

- promote the importance of exploring business issues from different cultural perspectives encourage a holistic view of the world of business
- enable the student to develop the capacity to think critically about individual and organizational behaviour
- enhance the student's ability to make informed business decisions
- enable the student to appreciate the nature and significance of change in a local, regional and global context
- promote awareness of social, cultural and ethical factors in the actions of organizations and individuals in those organizations
- appreciate the social and ethical responsibilities associated with businesses operating in international markets.

## OBJECTIVES

Having followed the Business and management programme at Higher or Standard level, candidates should be expected to:

- demonstrate knowledge and understanding of business terminology, concepts, principles and theories
- make business decisions by identifying the issue(s), selecting and interpreting data, applying appropriate tools and techniques, and recommending suitable solutions
- analyse and evaluate business decisions using a variety of sources
- evaluate business strategies and/or practices showing evidence of critical thinking
- apply skills and knowledge learned in the subject to hypothetical and real business situations
- communicate business ideas and information effectively and accurately using appropriate formats and tools.

In addition to the above, students at HL will be expected to:

- synthesize knowledge in order to develop a framework for business decision-making.

## SYLLABUS OUTLINE

### HL and SL core

#### *Topic 1: Business organization and environment*

- 1.1 Nature of business activity
- 1.2 Types of organization
- 1.3 Organizational objectives
- 1.4 Stakeholders
- 1.5 External environment
- 1.6 Organizational planning tools
- 1.7 Growth and evolution
- 1.8 Change and the management of change
- 1.9 Globalization

#### *Topic 2: Human resources*

- 2.1. Human resource planning
- 2.2. Organizational structure
- 2.3. Communication
- 2.4. Leadership and management
- 2.5. Motivation
- 2.6. Organizational and corporate cultures
- 2.7. Employer and employee relations
- 2.8. Crisis management and contingency planning

#### *Topic 3: Accounts and finance*

- 3.1 Sources of finance
- 3.2 Investment appraisal
- 3.3 Working capital
- 3.4 Budgeting
- 3.5 Final accounts
- 3.6 Ratio analysis

#### *Topic 4: Marketing*

- 4.1 The role of marketing
- 4.2 Marketing planning
- 4.3 Product
- 4.4 Price
- 4.5 Promotion
- 4.6 Place (distribution)
- 4.7 International marketing
- 4.8 E-commerce

#### *Topic 5: Operations management*

- 5.1 Production methods
- 5.2 Costs and revenues
- 5.3 Break-even analysis
- 5.4 Quality assurance
- 5.5 Location
- 5.6 Innovation
- 5.7 Production planning
- 5.8 Project management

### HL only

#### *Topic 6: Business strategy*

- Stage 1: Strategic analysis
- Stage 2: Strategic choice
- Stage 3: Strategic implementation

## ASSESSMENT DETAILS

### External Assessment

#### General

#### 1. Papers 1 and 2

The two written examination papers, Paper 1 and Paper 2, which are externally set and externally marked, test the assessment objectives identified in the introduction.

#### 2. Case Study (Paper 1)

- The case study is provided by the IBO well before the examination session. Teachers are advised to spend no more than four weeks on the case study.
- The case on which Paper 1 is based will be the same for Higher Level and Standard Level, but different questions will be set for each level.
- The purpose of the case study is to assess, in depth and across a number of topics, the student's ability to apply business knowledge to a given situation.

#### HL internal assessment criteria

The HL business and management research project is assessed against five criteria that are related to the objectives for the business and management course. Criterion A refers to the research proposal and action plan, while criteria B–E are used to assess the written report.

- |                    |  |
|--------------------|--|
| <b>Criterion A</b> | Research proposal and action plan                              |
| <b>Criterion B</b> | Use of theoretical concepts, sources and data (written report) |
| <b>Criterion C</b> | Analysis and evaluation (written report)                       |
| <b>Criterion D</b> | Conclusions and recommendations (written report)               |
| <b>Criterion E</b> | Value to management (written report)                           |

#### SL internal assessment criteria

The SL business and management written commentary is assessed against six criteria that are related to the objectives for the business and management course.

- |                    |   |
|--------------------|---|
| <b>Criterion A</b> | Supporting documents  |
| <b>Criterion B</b> | Choice and application of business tools, techniques and theory |
| <b>Criterion C</b> | Use, analysis and synthesis of data                             |
| <b>Criterion D</b> | Conclusions   |
| <b>Criterion E</b> | Evaluation and critical thinking                                |
| <b>Criterion F</b> | Presentation  |

## ASSESSMENT OUTLINE

### Higher Level

<b>External Assessment</b>	<b>75%</b>
<b>Written Papers 4½ hours</b>	
<b>Paper 1 2¼ hours</b>	<b>40%</b>
<b>Section A</b>	
Students answer <b>two</b> of three structured questions (30 marks)	
<b>Section B</b>	
Students answer <b>one</b> compulsory structured question including evaluative skills. (20 marks)	
<b>Section C</b>	
Students answer <b>one</b> compulsory question focusing on strategic decision-making through the use of extension material. (30 marks)	
<b>Paper 2 2½ hours</b>	<b>35%</b>
<b>Section A</b>	
Students answer <b>one</b> of two structured questions based on stimulus material with a quantitative element. (25 marks)	
<b>Section B</b>	
Students answer <b>two</b> of three structured questions based on stimulus material. (50 marks)	
<b>Internal Assessment (Research Project)</b>	<b>25%</b>
<b>30 hours</b>	
Research proposal and action plan—a working document not part of the actual report, but part of planning. Report that addresses an issue facing an organization or analyses a decision to be made by an organization. (Maximum 2,000 words) (25 marks)	

### Standard Level

<b>External Assessment</b>	<b>80%</b>
<b>Written Papers 3 hours</b>	
<b>Paper 1 1¼ hours</b>	<b>35%</b>
<b>Two</b> compulsory sections, A and B.	
<b>Section A</b>	
Students answer <b>two</b> of three structured questions (30 marks)	
<b>Section B</b>	
Students answer <b>one</b> compulsory structured question including evaluative skills. (20 marks)	
<b>Paper 1 ¾ hours</b>	<b>40%</b>
<b>Section A</b>	
Students answer <b>one</b> of two structured questions based on stimulus material with a quantitative element. (20 marks)	
<b>Section B</b>	
Students answer <b>two</b> of three structured questions based on stimulus material. (40 marks)	
<b>Internal Assessment (Written Commentary)</b>	<b>20%</b>
<b>15 hours</b>	
Written commentary based on three to five supporting documents about a real issue or problem facing a particular organization. (Maximum 1,500 words) (25 marks)	

# ECONOMICS

## NATURE OF THE SUBJECT

Economics is a dynamic social science, forming part of the study of individuals and societies. The study of economics is essentially about the concept of scarcity and the problem of resource allocation.

Although economics involves the formulation of theory, it is not a purely theoretical subject: economic theories can be applied to real-world examples. Neither is economics a discrete subject, since economics incorporates elements of history, geography, psychology, sociology, political studies and many other related fields of study.

Economics does not exist in a vacuum, because it naturally must consider how economic theory is to be applied in an international context.

The scientific approach characterizes the standard methodology of economics. This methodology can be summarized as a progression from problem identification, through hypothesis formulation and testing, arriving finally at a conclusion.

Alongside the empirical observations of positive economics, students of the subject are asked to formulate normative questions. Encouraging students to explore such questions forms the central focus of the economics course.

## AIMS

The aims of the economics course at higher level and standard level are to:

- provide students with a core knowledge of economics
- encourage students to think critically about economics
- promote an awareness and understanding of internationalism in economics
- encourage students' development as independent learners
- enable students to distinguish between positive and normative economics
- enable students to recognize their own tendencies for bias.

## OBJECTIVES

Having followed the Diploma Programme course in economics, candidates will be expected to:

1. have an understanding and knowledge of economic concepts and theories
2. apply economic theory to a range of circumstances and a variety of situations
3. analyse information through the use of economic concepts and theories
4. evaluate concepts and theories from different economic perspectives.

## HIGHER LEVEL AND STANDARD LEVEL SYLLABUS OUTLINE

### Section 1: Introduction to economics

### Section 2: Microeconomics

- 2.1 Markets
- 2.2 Elasticities
- 2.3 Theory of the firm (higher level only)
- 2.4 Market failure

### Section 3: Macroeconomics

- 3.1 Measuring national income
- 3.2 Introduction to development
- 3.3 Macroeconomic models
- 3.4 Demand-side and supply-side policies
- 3.5 Unemployment and inflation
- 3.6 Distribution of income

### Section 4: International economics

- 4.1 Reasons for trade
- 4.2 Free trade and protectionism
- 4.3 Economic integration
- 4.4 World Trade Organization (WTO)
- 4.5 Balance of payments
- 4.6 Exchange rates
- 4.7 Balance of payment problems
- 4.8 Terms of trade

### Section 5: Development economics

- 5.1 Sources of economic growth and/or development
- 5.2 Consequences of growth
- 5.3 Barriers to economic growth and/or development
- 5.4 Growth and development strategies
- 5.5 Evaluation of growth and development strategies

## HIGHER LEVEL ASSESSMENT OUTLINE

<b>External assessment</b>			<b>80%</b>
<b>Written papers</b>	<b>4 hours</b>		
<b>Paper 1</b>	<b>1 hour</b>	<b>20%</b>	
This paper consists of four extended-response questions based on all five sections of the syllabus. Each question is divided into two parts and may relate to more than one section of the syllabus.			
Candidates must attempt one question.			
<b>Paper 2</b>	<b>1 hour</b>	<b>20%</b>	
A short-answer question paper based on all five sections of the syllabus.			
The paper consists of six questions.			
Candidates must attempt three questions.			
<b>Paper 3</b>	<b>2 hours</b>	<b>40%</b>	
A data-response paper based on all five sections of the syllabus.			
The paper consists of five structured questions based on all five sections of the syllabus.			
Candidates must attempt three questions.			
<b>Internal assessment</b>			<b>20%</b>
Candidates produce a portfolio of four commentaries.			

## STANDARD LEVEL ASSESSMENT OUTLINE

<b>External assessment</b>			<b>75%</b>
<b>Written papers</b>	<b>3 hours</b>		
<b>Paper 1</b>	<b>1 hour</b>	<b>25%</b>	
This paper consists of four extended-response questions based on all five sections of the syllabus. Each question is divided into two parts and may relate to more than one section of the syllabus.			
Candidates must attempt one question.			
<b>Paper 2</b>	<b>2 hours</b>	<b>50%</b>	
A data-response question paper based on all five sections of the syllabus.			
The paper consists of five structured questions based on all five sections of the syllabus.			
Candidates must attempt three questions.			
<b>Internal assessment</b>			<b>25%</b>
Candidates produce a portfolio of four commentaries.			

# HISTORY

## NATURE OF THE SUBJECT

History is particularly important in the modern world, where different cultures and traditions have to understand one another.

History is concerned with individuals and societies in the widest context: political, social, economic, religious, technological and cultural. It is concerned with trends and developments, with continuity and change through time, and with specific happenings.

Historical knowledge rests on widely accepted evidence, derived from a variety of sources, but also draws on information of a more tenuous nature. Historical accounts involve judgements based on qualitative evidence and these judgements may be provisional. Every generation rewrites its own history in the light of new evidence and of subsequent events and processes, and under the influence of its particular attitudes and prejudices.

The process of historical enquiry, explanation and interpretation is a never ending activity, for which historians have developed values and conventions which themselves change over time.

History teaching which develops candidates' understanding of the discipline of history, its rules and values, as well as passing on historical knowledge, allows young people to understand how and why there are different accounts of the past and the criteria upon which they may be judged. Thus candidates may learn different accounts of history but still be able to understand and assess each other's accounts though they live and study in different countries.

These are some of the basic features and values of history which candidates studying the subject for the International Baccalaureate are capable of understanding and recognising. Teaching and learning at both higher level and Standard level should be organised to promote such understanding and recognition.

## AIMS

The aims of the history programme at Higher level and Standard level are to promote:

1. the acquisition and understanding of historical knowledge in breadth and in depth, and across different cultures
2. a developing appreciation and understanding of history as a discipline, including the nature and diversity of its sources, methods and interpretations
3. international awareness and understanding by promoting the achievement of empathy with, and understanding of, people living in diverse places and at different times
4. a better understanding of the present through an understanding of the past
5. an appreciation of the historical dimension of the human condition
6. an ability to use and communicate historical knowledge and understanding
7. a lasting interest in history.

## OBJECTIVES

Having followed the programme at higher or Standard level, candidates should be able to:

1. demonstrate historical understanding through the acquisition, selection and effective use of knowledge
2. present clear, concise, relevant and well-substantiated arguments
3. evaluate, interpret and use source material critically as historical evidence
4. identify and evaluate different approaches to, and interpretations of, historical events and topics
5. explain the causes and effects of historical continuity and change.

## HIGHER LEVEL SYLLABUS

### Syllabus outline

The syllabus requires a candidate to:

1. Study twentieth century world history from exposure to two (2) topics from the following list:
  - Topic 1** Causes, practices and effects of war
  - Topic 2** Nationalist and independence movements, decolonisation and challenges facing new states
  - Topic 3** The rise and rule of single-party states
  - Topic 4** The establishment and work of international organisations
  - Topic 5** The Cold War
  - Topic 6** The state and its relationship with religion and with minorities
2. Study **one** of the following regional options:
  - Africa
  - Americas
  - East and South East Asia and Oceania
  - Europe (including Russia/USSR)
  - South Asia and the Middle East (including North Africa)
3. Document Analyses
4. Undertake an in-depth study on any historical subject.

## STANDARD LEVEL SYLLABUS

### Syllabus outline

The syllabus requires a candidate to:

1. Study twentieth century world history from exposure to two (2) topics chosen from the following list:
  - Topic 1** Causes, practices and effects of war
  - Topic 2** Nationalist and independence movements, decolonisation and challenges facing new states
  - Topic 3** The rise and rule of single-party states
  - Topic 4** International organisations and Multi-party states
  - Topic 5** The Cold War
  - Topic 6** The state and its relationship with religion and with minorities
2. Documents Analyses
3. Undertake an in-depth study on any historical subject.

## STANDARD LEVEL ASSESSMENT OUTLINE

### External assessment

75%

The external assessment comprises two examination papers at Standard level

#### Paper 1

1 hour 25%

A document-based paper set on a prescribed subject drawn from the twentieth century world history topics.

The examination paper will comprise three sections: A, B and C. Each section will consist of four questions on each of the prescribed subjects. Students will be expected to respond to one (1) section only.

Section A will consist of four questions on prescribed subject 1

Section B will consist of four questions on prescribed subject 2

Section C will consist of four questions on prescribed subject 3

Candidates are required to answer **all four** questions from one section.

The maximum mark for the paper is 20.

#### Paper 2

1 hour 30 minutes 50%

An essay paper based on the twentieth century world history topics.

Each examination paper will comprise thirty questions, five on each of the six Twentieth Century World History topics.

Candidates are required to answer **two** questions, each chosen from a different topic.

The maximum mark for each question is 20.

The maximum mark for the paper is 40.

### Internal assessment

25%

Candidates must undertake an in-depth study on any historical subject.

Internally assessed by the teacher and externally moderated.

# PSYCHOLOGY

## NATURE OF THE SUBJECT

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.

## AIMS

The aims of the psychology course at SL and at HL are to:

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

## 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

## SYLLABUS OUTLINE

Syllabus component	Teaching hours	
	SL	HL
<b>Part 1: Core (SL/HL)</b> <ul style="list-style-type: none"> <li>• The biological level of analysis</li> <li>• The cognitive level of analysis</li> <li>• The sociocultural level of analysis</li> </ul>	90	90
<b>Part 2: Options (SL/HL)</b> <ul style="list-style-type: none"> <li>• Abnormal psychology</li> <li>• Developmental psychology</li> <li>• Health psychology</li> <li>• Psychology of human relationships</li> <li>• Sport psychology</li> </ul>	30	60
<b>Part 3: Qualitative research methodology (HL only)</b> <ul style="list-style-type: none"> <li>• Qualitative research in psychology</li> </ul>		50
<b>Part 4: Simple experimental study (SL/HL)</b> <ul style="list-style-type: none"> <li>• Introduction to experimental research methodology</li> </ul>	30	40
<b>Total teaching hours</b>	150	240

## ASSESSMENT

### Higher Level

Assessment component	Weighting
<b>External assessment (4 hours)</b>	<b>80%</b>
<b>Paper 1 (2 hours)</b> Section A: <b>Three</b> compulsory questions on part 1 of the syllabus. Section B: <b>Three</b> questions on part 1 of the syllabus. Students choose <b>one</b> question to answer in essay form. (46 marks)	<b>35%</b>
<b>Paper 2 (2 hours)</b> <b>Fifteen</b> questions on part 2 of the syllabus. Students choose <b>two</b> questions to answer in essay form. (44 marks)	<b>25%</b>
<b>Paper 3 (1 hour)</b> <b>Three</b> compulsory questions based on an unseen text, covering part 3 of the syllabus. (30 marks)	<b>20%</b>
<b>Internal assessment</b> A report of a simple experimental study conducted by the student. (28 marks)	<b>20%</b>

### Standard Level

Assessment component	Weighting
<b>External assessment (4 hours)</b>	<b>75%</b>
<b>Paper 1 (2 hours)</b> Section A: <b>Three</b> compulsory questions on part 1 of the syllabus. Section B: <b>Three</b> questions on part 1 of the syllabus. Students choose <b>one</b> question to answer in essay form. (46 marks)	<b>50%</b>
<b>Paper 2 (1 hour)</b> <b>Fifteen</b> questions on part 2 of the syllabus. Students choose <b>one</b> question to answer in essay form. (22 marks)	<b>25%</b>
<b>Internal assessment</b> A report of a simple experimental study conducted by the student. (20 marks)	<b>25%</b>

# **GROUP 4: EXPERIMENTAL SCIENCES**

## GROUP 4 CURRICULUM MODEL

Group 4 students at standard level (SL) and higher level (HL) undertake a common core syllabus, a common internal assessment (IA) scheme and have some overlapping elements in the options studied. They are presented with a syllabus that encourages the development of certain skills, attributes and attitudes, as described in the “Objectives” section of the group 4 subject guides. While the skills and activities of group 4 science subjects are common to students at both SL and HL, students at HL are required to study some topics in greater depth, to study additional topics and to study extension material of a more demanding nature in the common options. The distinction between SL and HL is one of breadth and depth.

Past experience shows that students will be able to study a group 4 science subject at SL successfully with no background in, or previous knowledge of, science. Their approach to study, characterized by the specific IB learner profile attributes—inquirers, thinkers and communicators—will be significant here. However, for most students considering the study of a group 4 subject at HL, while there is no intention to restrict access to group 4 subjects, some previous exposure to the specific group 4 subject would be necessary. Mercedes students who have undertaken the IB Middle Years Programme (MYP) should be well prepared. Other school-based science course would also be suitable preparation for study of a group 4 subject at HL.

Higher level students are required to spend 60 hours, and SL students 40 hours, on practical/investigative work. This includes 10 hours for the interdisciplinary group 4 project.

<b>Group 4 Curriculum Model</b>		
HL	Total teaching hours	SL
<b>Theory</b>	<b>180</b>	<b>110</b>
Core	80	80
Additional higher level (AHL)	55	
Options	45	30
<b>Practical Work</b>	<b>60</b>	<b>40</b>
Investigations	50	30
Group 4 project	10	10

## AIMS

Through studying any of the group 4 subjects, 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 distinguishes the group 4 subjects from other disciplines and characterizes each of the subjects within group 4. It is in this context that all the Diploma Programme experimental science courses should aim to:

1. provide opportunities for scientific study and creativity within a global context that will stimulate and challenge students.
2. provide a body of knowledge, methods and techniques that characterize science and technology.
3. enable students to 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. engender an awareness of the need for, and the value of, effective collaboration and communication during scientific activities.
6. develop experimental and investigative scientific skills.
7. develop and apply the students’ information and communication technology skills in the study of science.
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 science and scientists.
10. encourage an understanding of the relationships between scientific disciplines and the overarching nature of the scientific method.

## OBJECTIVES

The objectives for all group 4 subjects reflect those parts of the aims that will be assessed. Wherever appropriate, the assessment will draw upon environmental and technological contexts and identify the social, moral and economic effects of science. It is the intention of all the Diploma Programme experimental science courses that students achieve the following objectives.

1. Demonstrate an understanding of:
  - a. scientific facts and concepts
  - b. scientific methods and techniques
  - c. scientific terminology
  - d. methods of presenting scientific information.
2. Apply and use:
  - a. scientific facts and concepts
  - b. scientific methods and techniques
  - c. scientific terminology to communicate effectively
  - d. appropriate methods to present scientific information.
3. Construct, analyse and evaluate:
  - a. hypotheses, research questions and predictions
  - b. scientific methods and techniques
  - c. scientific explanations.
4. Demonstrate the personal skills of cooperation, perseverance and responsibility appropriate for effective scientific investigation and problem solving.
5. Demonstrate the manipulative skills necessary to carry out scientific investigations with precision and safety.

## ASSESSMENT

### External Assessment

The external assessment consists of three written papers.

#### Paper 1

- Paper 1 is made up of multiple-choice questions that test knowledge of the core only for students at SL and the core and AHL material for students at HL. The questions are designed to be short, one- or two-stage problems that address objectives 1 and 2 (see the “Objectives” section). No marks are deducted for incorrect responses. Calculators are not permitted, but students are expected to carry out simple calculations.

#### Paper 2

- Paper 2 tests knowledge of the core only for students at SL and the core and AHL material for students at HL. The questions address objectives 1, 2 and 3 and the paper is divided into two sections. In section A, there is a data-based question that requires students to analyse a given set of data. The remainder of section A is made up of short-answer questions. In section B, students at SL are required to answer one question from a choice of three, and students at HL are required to answer two questions from a choice of four. These extended-response questions may involve writing a number of paragraphs, solving a substantial problem, or carrying out a substantial piece of analysis or evaluation. A calculator is required for this paper.

#### Paper 3

- Paper 3 tests knowledge of the options and addresses objectives 1, 2 and 3. Students at SL are required to answer several short-answer questions in each of the two options studied. Students at HL are required to answer several short-answer questions and an extended-response question in each of the two options studied. A calculator is required for this paper.

#### Standard Level

Component	Overall Weighting (%)	Approximate Weighting of Objectives		Duration (hours)	Format and Syllabus Coverage
		1+2	3		
Paper 1	20	20		$\frac{3}{4}$	30 Multiple-choice questions on the core
Paper 2	32	16	16	$1\frac{1}{2}$	<b>Section A:</b> One data-based question and several short-answer questions on the core (all compulsory) <b>Section B:</b> One extended response question on the core (from a choice of three)
Paper 3	24	12	12	1	Several short-answer questions in each of the two options studied (all compulsory)

#### Higher Level

Component	Overall Weighting (%)	Approximate Weighting of Objectives		Duration (hours)	Format and Syllabus Coverage
		1+2	3		
Paper 1	20	20		1	40 Multiple-choice questions ( 15 common to SL plus about five more on the core and about 20 more on the AHL)
Paper 2	36	18	18	$2\frac{1}{4}$	<b>Section A:</b> One data-based question and several short-answer questions on the core and AHL (all compulsory) <b>Section B:</b> Two extended response questions on the core and AHL (from a choice of four)
Paper 3	20	10	10	$1\frac{1}{4}$	Several short-answer questions and one extended response question in each of the two options studied (all compulsory)

For both SL and HL, calculators are not permitted in paper 1 but are required in papers 2 and 3, where programmable graphic display calculators are allowed.

## Internal Assessment

The internal assessment (IA) requirements are the same for all group 4 subjects offered at Mercedes. The IA, worth 24% of the final assessment consists of an interdisciplinary project and a mixture of short- and long-term investigations (such as practicals and subject-specific projects). Student work is internally assessed by the teacher and externally moderated by the IBO. The performance in IA at both SL and HL is marked against assessment criteria, with each criterion having a maximum mark of 6.

### Rationale for Practical Work

Although the requirements of IA are mainly centred on the assessment of practical skills, the different types of experimental work that a student may engage in serve other purposes, including:

- illustrating, teaching and reinforcing theoretical concepts
- developing an appreciation of the essential hands-on nature of scientific work
- developing an appreciation of the benefits and limitations of scientific methodology

Therefore, there may be good justification for teachers to conduct further experimental work beyond that required for the IA scheme.

### Practical Scheme of Work

The practical scheme of work (PSOW) is the practical course planned by the teacher and acts as a summary of all the investigative activities carried out by a student. Students at SL and HL in the same subject may carry out some of the same investigations.

### The Group 4 Project

The group 4 project is an interdisciplinary activity in which all Diploma Programme science students must participate. The intention is that students from the different group 4 subjects analyse a common topic or problem. The exercise should be a collaborative experience where the emphasis is on the **processes** involved in scientific investigation rather than the **products** of such investigation. In most cases all IB diploma students at Mercedes would be involved in the investigation of the same topic in small groups.

# BIOLOGY

## NATURE OF THE SUBJECT

Biologists have accumulated huge amounts of information about living organisms, and it would be easy to confuse students by teaching large numbers of seemingly unrelated facts. In the Diploma Programme biology course, it is hoped that students will acquire a limited body of facts and, at the same time, develop a broad, general understanding of the principles of the subject. Although the Diploma Programme biology course at standard level (SL) and higher level (HL) has been written as a series of discrete statements (for assessment purposes), there are four basic biological concepts that run throughout.

### Structure and function

This relationship is probably one of the most important in a study of biology and operates at all levels of complexity. Students should appreciate that structures permit some functions while, at the same time, limiting others.

### Universality *versus* diversity

At the factual level, it soon becomes obvious to students that some molecules (for example, enzymes, amino acids, nucleic acids and ATP) are ubiquitous, and so are processes and structures. However, these universal features exist in a biological world of enormous diversity. Species exist in a range of habitats and show adaptations that relate structure to function. At another level, students can grasp the idea of a living world in which universality means that a diverse range of organisms (including ourselves) are connected and interdependent.

### Equilibrium within systems

Checks and balances exist both within living organisms and within ecosystems. The state of dynamic equilibrium is essential for the continuity of life.

### Evolution

The concept of evolution draws together the other themes. It can be regarded as change leading to diversity within constraints, and this leads to adaptations of structure and function.

These four concepts serve as themes that unify the various topics that make up the three sections of the course: the core, the additional higher level (AHL) material and the options. The order in which the syllabus is arranged is **not** the order in which it should be taught, and it is up to individual teachers to decide on an arrangement that suits their circumstances. Option material may be taught within the core or the AHL material, if desired.

## SYLLABUS OVERVIEW

The syllabus for the Diploma Programme biology course is divided into three parts: the core, the AHL material and the options. A syllabus overview is provided below.

	<b>Teaching hours</b>
<b>Core</b>	<b>80</b>
Topic 1: Statistical analysis	2
Topic 2: Cells	12
Topic 3: The chemistry of life	15
Topic 4: Genetics	15
Topic 5: Ecology and evolution	16
Topic 6: Human health and physiology	20
<b>AHL</b>	<b>55</b>
Topic 7: Nucleic acids and proteins	11
Topic 8: Cell respiration and photosynthesis	10
Topic 9: Plant science	11
Topic 10: Genetics	6
Topic 11: Human health and physiology	17
<b>Options</b>	<b>15/22</b>
Students at SL are required to study any <b>two</b> options from A–G. The duration of each option is 15 hours. Students at HL are required to study any <b>two</b> options from D–H. The duration of each option is 22 hours.	
<b>Options SL</b>	
Option A: Human nutrition and health	15
Option B: Physiology of exercise	15
Option C: Cells and energy	15
<b>Options SL and HL</b>	
Option D: Evolution	15/22
Option E: Neurobiology and behaviour	15/22
Option F: Microbes and biotechnology	15/22
Option G: Ecology and conservation	15/22
<b>Options HL</b>	
Option H: Further human physiology	22

# CHEMISTRY

## NATURE OF THE SUBJECT

Chemistry is an experimental science that combines academic study with the acquisition of practical and investigational skills. It is called the central science, as chemical principles underpin both the physical environment in which we live and all biological systems. Apart from being a subject worthy of study in its own right, chemistry is a prerequisite for many other courses in higher education, such as medicine, biological science and environmental science, and serves as useful preparation for employment. The Diploma Programme chemistry course includes the essential principles of the subject but also, through selection of options, 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 science in higher education and those who do not.

## SYLLABUS OVERVIEW

The syllabus for the Diploma Programme chemistry course is divided into three parts: the core, the AHL material and the options. The Chemistry data booklet is an integral part of the syllabus and should be used in conjunction with the syllabus.

	<b>Teaching hours</b>
<b>Core</b>	<b>80</b>
Topic 1: Quantitative chemistry	12.5
Topic 2: Atomic structure	4
Topic 3: Periodicity	6
Topic 4: Bonding	12.5
Topic 5: Energetics	8
Topic 6: Kinetics	5
Topic 7: Equilibrium	5
Topic 8: Acids and bases	6
Topic 9: Oxidation and reduction	7
Topic 10: Organic chemistry	12
Topic 11: Measurement and data processing	2
<b>AHL</b>	<b>55</b>
Topic 12: Atomic structure	3
Topic 13: Periodicity	4
Topic 14: Bonding	5
Topic 15: Energetics	8
Topic 16: Kinetics	6
Topic 17: Equilibrium	4
Topic 18: Acids and bases	10
Topic 19: Oxidation and reduction	5
Topic 20: Organic chemistry	10

**Options****15/22**

Students at SL are required to study any **two** options from A–G. The duration of each option is 15 hours.

Students at HL are required to study any **two** options from A–G. The duration of each option is 22 hours.

**Options SL and HL**

Option A:	Modern analytical chemistry	15/22
Option B:	Human biochemistry	15/22
Option C:	Chemistry in industry and technology	15/22
Option D:	Medicines and drugs	15/22
Option E:	Environmental chemistry	15/22
Option F:	Food chemistry	15/22
Option G:	Further organic chemistry	15/22

# PHYSICS

## NATURE OF THE SUBJECT

Physics is the most fundamental of the experimental sciences, as it seeks to explain the universe itself, from the very smallest particles—quarks (perhaps  $10^{-17}$  m in size), which may be truly fundamental—to the vast distances between galaxies ( $10^{24}$  m).

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

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

Despite the exciting and extraordinary development of ideas throughout the history of physics, certain things have remained unchanged. Observations remain essential at the very core of physics, and this sometimes requires a leap of imagination to decide what to look for. Models are developed to try to understand the observations, and these themselves can become theories that attempt to explain the observations. Theories are not directly derived from the observations but need to be created. These acts of creation can sometimes compare to those in great art, literature and music, but differ in one aspect that is unique to science: the predictions of these theories or ideas must be tested by careful experimentation. Without these tests, a theory is useless. A general or concise statement about how nature behaves, if found to be experimentally valid over a wide range of observed phenomena, is called a law or a principle. The scientific processes carried out by the most eminent scientists in the past are the same ones followed by working physicists today and, crucially, are also accessible to students in schools. Early in the development of science, physicists were both theoreticians and experimenters (natural philosophers). The body of scientific knowledge has grown in size and complexity, and the tools and skills of theoretical and experimental physicists have become so specialized, that it is difficult (if not impossible) to be highly proficient in both areas. While students should be aware of this, they should also know that the free and rapid interplay of theoretical ideas and experimental results in the public scientific literature maintains the crucial links between these fields.

At the school level both theory and experiments should be undertaken by all students. They should complement one another naturally, as they do in the wider scientific community. The Diploma Programme physics course allows students to develop traditional practical skills and techniques and to increase facility in the use of mathematics, which is the language of physics. It also allows students to develop interpersonal skills, and information and communication technology skills, which are essential in modern scientific endeavour and are important life-enhancing, transferable skills in their own right. Alongside the growth in our understanding of the natural world, perhaps the more obvious and relevant result of physics to most of our students is our ability to change the world. This is the technological side of physics, in which physical principles have been applied to construct and alter the material world to suit our needs, and have had a profound influence on the daily lives of all human beings—for good or bad. This raises the issue of the impact of physics on society, the moral and ethical dilemmas, and the social, economic and environmental implications of the work of physicists. These concerns have become more prominent as our power over the environment has grown, particularly among young people, for whom the importance of the responsibility of physicists for their own actions is self-evident. Physics is therefore, above all, a human activity, and students need to be aware of the context in which physicists work. Illuminating its historical development places the knowledge and the process of physics in a context of dynamic change, in contrast to the static context in which physics has sometimes been presented. This can give students insights into the human side of physics: the individuals; their personalities, times and social milieu; and their challenges, disappointments and triumphs.

## SYLLABUS OVERVIEW

The syllabus for the Diploma Programme physics course is divided into three parts: the core, the AHL material and the options. The Physics data booklet is an integral part of the syllabus and should be used in conjunction with the syllabus.

	<b>Teaching hours</b>
<b>Core</b>	<b>80</b>
Topic 1: Physics and physical measurement	5
Topic 2: Mechanics	17
Topic 3: Thermal physics	7
Topic 4: Oscillations and waves	10
Topic 5: Electric currents	7
Topic 6: Fields and forces	7
Topic 7: Atomic and nuclear physics	9
Topic 8: Energy, power and climate change	18
<b>AHL</b>	<b>55</b>
Topic 12: Motion in fields	8
Topic 13: Thermal physics	6
Topic 14: Wave phenomena	12
Topic 15: Electromagnetic induction	6
Topic 16: Quantum physics and nuclear physics	15
Topic 17: Digital technology	8
<b>Options</b>	<b>15/22</b>
Students at SL are required to study any <b>two</b> options from A–G. The duration of each option is 15 hours.	
Students at HL are required to study any <b>two</b> options from A–G. The duration of each option is 22 hours.	
<b>Options SL</b>	
Option A: Sight and wave phenomena	15
Option B: Quantum physics and nuclear physics	15
Option C: Digital technology	15
Option D: Relativity and particle physics	15
<b>Options SL and HL</b>	
Option E: Astrophysics	15/22
Option F: Communications	15/22
Option G: Electromagnetic waves	15/22
<b>Options HL</b>	
Option H: Relativity	22
Option I: Medical physics	22
Option J: Particle physics	22

# **GROUP 5: MATHEMATICS**

# MATHEMATICS

## INTRODUCTION

The nature of mathematics can be summarised in a number of ways; for example, as a well-defined body of knowledge, an abstract system of ideas or as a useful tool. For many people it is probably a combination of these, but there is no doubt that mathematical knowledge provides an important key to understanding the world in which we live. Mathematics can enter our lives through a number of ways: buying produce in the market, consulting a timetable, reading a newspaper, timing a process or estimating a length. For most people mathematics also extends into their chosen profession: artists need to learn about perspective; musicians need to appreciate the mathematical relationships within and between different rhythms; economists need to recognise trends in financial dealings; and engineers need to take account of stress patterns. Scientists view mathematics as a language that is vital to our understanding of events that occur in the natural world. Other people are challenged by the logical methods of mathematics and the adventure in reason that mathematical proof has to offer. Still others appreciate mathematics as an aesthetic experience or even as a corner stone of philosophy. The prevalence of mathematics in people's lives thus provides a clear and sufficient rationale for making the study of this subject compulsory within the IB diploma.

Since individual students have different needs, interests and abilities, the International Baccalaureate offers a number of different programmes in mathematics. These are targeted at students who wish to study mathematics in depth, either as a subject in its own right or in order to pursue their interests in areas related to mathematics, those who wish to gain a degree of understanding and competence in order to understand better their approach to other subjects and those who may not be aware that mathematics has relevance in their studies and in their future lives. Each programme is designed to meet the needs of a particular group of students and therefore great care should be exercised in selecting the one which is most appropriate for an individual student.

In making the selection, individual students should be advised to take account of the following considerations.

- Their own abilities in mathematics and the type of mathematics in which they can be successful.
- Their own interest in mathematics with respect to the areas which hold an appeal.
- Their other choices of subjects within the framework of the IB diploma.
- Their future academic plans in terms of the subjects they wish to study.
- Their choice of career.

Teachers will assist with the selection process and to offer advice to students on choosing the most appropriate subject from group 5.

## AIMS

The aims of **all** programmes in group 5 are to enable candidates to:

- appreciate the international dimensions of mathematics and the multiplicity of its cultural and historical perspectives
- foster enjoyment from engaging in mathematical pursuits, and to develop an appreciation of the beauty, power and usefulness of mathematics
- develop logical, critical and creative thinking in mathematics
- develop mathematical knowledge, concepts and principles
- employ and refine the powers of abstraction and generalisation
- develop patience and persistence in problem-solving
- have an enhanced awareness of, and utilise the potential of, technological developments in a variety of mathematical contexts
- communicate mathematically, both clearly and confidently, in a variety of contexts.

The following outline gives a brief description of the Mathematics courses offered in the IB Diploma: Mathematics HL and Mathematics SL.

# MATHEMATICS HL

## NATURE OF THE SUBJECT

Mathematics, available as a higher level (HL) subject, caters for students with a good background in mathematics who are competent in a range of analytical and technical skills. The majority of these students will be expecting to include mathematics as a major component of their university studies, either as a subject in its own right or within courses such as physics, engineering and technology. Others may take this subject because they have a strong interest in mathematics and enjoy meeting its challenges and engaging its problems.

The nature of the subject is such that it focuses on developing important mathematical concepts in a comprehensible and coherent way. This is achieved by means of a carefully balanced approach: students are encouraged to apply their mathematical knowledge to solving problems set in a variety of meaningful contexts whilst, at the same time, being introduced to important concepts of rigour and proof.

Students embarking on this course should expect to develop insight into mathematical form and structure in their studies, and should be intellectually equipped to appreciate the links between parallel structures in different topic areas. They should also be encouraged to develop the skills needed to continue their mathematical growth in other learning environments.

The internally assessed component, the portfolio, offers students a framework for developing independence in their mathematical development through engaging in the following activities: mathematical investigation, extended closed-problem solving, mathematical modelling and mathematical research. Students will thus be provided with the means to ask their own questions about mathematics and be given the chance to explore different ways of arriving at a solution, either through experimenting with the techniques at their disposal or by researching into new methods. This process also allows students to work without the time constraints of a written examination and to acquire ownership of a part of the programme.

**This course is clearly a demanding one**, requiring students to study a broad range of mathematical topics through a number of different approaches and to varying degrees of depth. Students wishing to study mathematics in a less rigorous environment should therefore opt for one of the standard level programmes: Mathematics SL or Mathematical Studies.

## SYLLABUS

The mathematics higher level (HL) programme consists of the study of seven **core** topics and one **option**.

### Part I: Core (190 hours)

All topics in the core are compulsory. Candidates are required to study all the sub-topics in each of the seven topics in this part of the syllabus as listed in the Syllabus Details.

1. Algebra
2. Functions and Equations
3. Circular Functions and Trigonometry
4. Matrices
5. Vectors
6. Statistics and Probability
7. Calculus

### Part II: Options (40 hours)

*Candidates are required to study all the sub-topics in one of the following options as listed in the Syllabus Details.*

1. Statistics and Probability
2. Sets, Relations and Groups
3. Series and Differential Equations
4. Discrete Mathematics

### Portfolio (10 hours)

Two assignments, based on different areas of the syllabus

## ASSESSMENT OUTLINE – Higher Level

### External Assessment

80%

**Written Papers 5 hours**

**Paper 1 2 hours No Calculators allowed 30%**

Twenty compulsory short-response questions based on part I of the syllabus, the compulsory core.

**Paper 2 2 hours Graphic Display Calculator required 35%**

Five compulsory extended-response questions based on part I of the syllabus, the compulsory core.

**Paper 3 : 1 hour 15%**

Students will answer the paper on the nominated option studied during the program.

### Internal Assessment

20%

#### Portfolio

A collection of **two** pieces of work assigned by the teacher and completed by the candidate during the course. The assignments must be based on different areas of the syllabus and represent two activities: a mathematical investigation and mathematical modelling.

The portfolio is internally assessed by the teacher and externally moderated by the IBO.

# MATHEMATICS SL

## NATURE OF THE SUBJECT

Mathematics SL caters for students who anticipate a need for a sound mathematical background in preparation for their future studies. The nature of the subject is such that the programme focuses on introducing important mathematical concepts through the development of mathematical techniques. The intention is to introduce candidates to these concepts in a comprehensible and coherent way rather than insisting on mathematical rigour. The majority of concepts are included because they underpin important mathematical processes. These form a major part of the programme. In some cases concepts are included because they are essential to any further study in mathematics.

Students embarking on this course are expected to possess already knowledge of basic concepts and to be equipped with the skills needed to apply simple mathematical techniques correctly. It is a demanding course since it contains a broad range of mathematical topics.

Because of the nature of this subject, teachers will, wherever possible, encourage students to apply the mathematical knowledge they have learned to solve meaningful problems set in an appropriate context. The internally assessed component, the portfolio, provides an excellent opportunity for a more considered approach to this aspect of the course. For the portfolio, students are expected to undertake work of an independent nature in the areas of mathematical investigation and modelling as well as in closed-problem solving. They will thus be provided with the means to ask their own questions about mathematics and be given the chance to explore different ways of arriving at a solution using a variety of techniques at their disposal. This process also allows students to work without the time constraints of a written examination and to acquire ownership of a part of the programme.

The population of students most likely to select this subject will be those who expect to go on to study subjects which have a significant mathematical content, for example, chemistry, economics, geography, psychology and business administration. Students wishing to study subjects with a high degree of mathematical content should therefore opt for the higher level programme rather than a standard level programme.

## SYLLABUS

The Mathematics SL programme consists of the study of seven **core** topics.

### Content (140 hours)

All topics are compulsory. Candidates are required to study all the sub-topics of the seven topics in this part of the syllabus as listed in the Syllabus Details.

1. Algebra
2. Functions and Equations
3. Circular Functions and Trigonometry
4. Matrices
5. Vectors
6. Statistics and Probability
7. Calculus

### Portfolio (10 hours)

**Two** assignments, based on different areas of the syllabus, representing the following types of activities:

- mathematical investigation
- mathematical modelling

## ASSESSMENT OUTLINE – Standard Level

### External Assessment 80%

#### Written Papers 3 hours

**Paper 1**            1 ½ hours            **No Calculators allowed**            **40%**

Short-response (Section A) and extended questions (Section B) based on the whole of the syllabus.

**Paper 2**            1 ½ hours            **Graphic Display Calculator required**            **40%**

Short-response (Section A) and extended questions (Section B) based on the whole of the syllabus.

### Internal Assessment 20%

#### Portfolio

A collection of **two** pieces of work assigned by the teacher and completed by the candidate during the course. The assignments must be based on different areas of the syllabus and represent the two activities: mathematical investigation and mathematical modelling.

The portfolio is internally assessed by the teacher and externally moderated by the IBO.

# MATHEMATICAL STUDIES SL

## NATURE OF THE SUBJECT

Mathematical Studies SL caters for students with varied backgrounds and abilities. More specifically, it is designed to build confidence and encourage an appreciation of mathematics in students who do not anticipate a need for mathematics in their future studies. Students taking this course need to be already equipped with fundamental skills and a rudimentary knowledge of basic processes.

The course concentrates on mathematics that can be applied to contexts related as far as possible to other subjects being studied, to common real-world occurrences and to topics that relate to home, work and leisure situations. The course includes project work, a feature unique within this group of courses: students must produce a project, a piece of written work based on personal research, guided and supervised by the teacher. The project provides an opportunity for students to carry out a mathematical investigation in the context of another course being studied, a hobby or interest of their choice using skills learned before and during the course. This process allows students to ask their own questions about mathematics and to take responsibility for a part of their own course of studies in mathematics.

The students most likely to select this course are those whose main interests lie outside the field of mathematics, and for many students this course will be their final experience of being taught formal mathematics. All parts of the syllabus have therefore been carefully selected to ensure that an approach starting with first principles can be used. As a consequence, students can use their own inherent, logical thinking skills and do not need to rely on standard algorithms and remembered formulae. Students likely to need mathematics for the achievement of further qualifications should be advised to consider an alternative mathematics course.

## SYLLABUS

The Mathematics Studies SL programme consists of the study of eight topics. All topics are compulsory. Students must study all the sub-topics in each of the topics in the syllabus as listed in this guide. Students are also required to be familiar with the topics listed as presumed knowledge (PK).

### Content (130 hrs)

Topic 1—Introduction to the graphic display calculator	3 hrs
Topic 2—Number and algebra	14 hrs
Topic 3—Sets, logic and probability	20 hrs
Topic 4—Functions	24 hrs
Topic 5—Geometry and trigonometry	20 hrs
Topic 6—Statistics	24 hrs
Topic 7—Introductory differential calculus	15 hrs
Topic 8—Financial mathematics	10 hrs

### Project (20 hrs)

The project is an individual piece of work involving the collection of information or the generation of measurements, and the analysis and evaluation of the information or measurements.

## ASSESSMENT OUTLINE

### External Assessment 80%

<b>Written Papers</b>	<b>3 hours</b>	
<b>Paper 1</b>	<b>1 ½ hours</b>	<b>40%</b>
15 compulsory short-response questions based on the whole syllabus.		
<b>Paper 2</b>	<b>1 ½ hours</b>	<b>40%</b>
5 compulsory extended-response questions based on the whole syllabus.		

### Internal Assessment 20%

#### Project

The project is an individual piece of work involving the collection of information or the generation of measurements, and the analysis and evaluation of the information or measurements.

# **GROUP 6:**

# **THE ARTS**

# MUSIC

## NATURE OF THE SUBJECT

The Australian aborigines believe that music is in the universe seeking to be heard. How might the intelligent and sensitive performer, composer and listener prepare to hear it? The study of music allows for exploration of the shared human perceptions and emotions which temper our lives; those common or singular experiences which by other means are imperfectly expressed, or cannot be expressed at all.

The art of music demands that the educated musician and music lover be able to recognise and articulate musical elements realised in diverse examples of music making. A vibrant musical education fosters curiosity in, and sensitivity to, the musical worlds which surround us. The alert mind trained in the disciplined study of music will appreciate the ways in which music integrates and manifests knowledge on multiple levels. With careful listening, the musician may become humbled by the power of music to change lives.

What does the study of music entail? We learn to hear pitch in sound and pattern in rhythm. We learn to hear the unfolding of sonic structures as parts repeat and transform themselves. We learn to listen and look for distinctions and beauty. We learn to be surprised, moved and inspired by the similarities and differences in music. We learn to hear the correlation between phrasing in music and phrasing in the living of our lives. We learn to accept the power of music over us. We learn to allow music to point to beauty beyond ourselves, in the presence of which we may feel exalted or consoled, uplifted or fortified.

## AIMS

The aims of the IBO Music programme are to:

- give students the opportunity to explore and enjoy the diversity of music throughout the world
- encourage students to develop perceptual skills through a breadth of musical experiences, where they will learn to recognise, speculate, analyse, identify, discriminate and hypothesize in relation to music
- enable students to develop creatively their knowledge, abilities and understanding through performance and composition
- assist students to develop their potential as musicians both personally and collaboratively, in whatever capacity, to the full.

## OBJECTIVES

Candidates who have completed the Higher Level (HL) programme will be expected to demonstrate:

- development of their performance skills through solo music making
- development of their compositional skills through exploration and investigation of musical elements
- use of appropriate musical language and terminology to describe and reflect their critical understanding of music
- development of perceptual skills in response to music
- knowledge and understanding of music in relation to time and place.

Candidates who have completed the Standard Level (SL) programme will be expected to demonstrate:

- use of appropriate musical language and terminology to describe and reflect their critical understanding of music
- development of perceptual skills in response to music
- knowledge and understanding of music in relation to time and place.

In addition, Standard Level candidates following the option indicated, Solo Performance (SLS), Group Performance (SLG) or Composition (SLC), will be expected to demonstrate:

- development of their performance skills through solo (SLS) or ensemble (SLG) music making

## OR

- development of their compositional skills through exploration and investigation of musical elements (SLC).

**SYLLABUS OUTLINE**

**Higher Level (3 compulsory parts)**

**240 hours**

This is designed for the specialist music student with a background in musical performance and composition, who may pursue music at university or conservatoire level.

- Musical Perception and Analysis
- Solo Performance: voice or instrument, one or more recitals
- Composition: three contrasting compositions

**Standard Level (3 options)**

**150 hours**

**Solo Performance Option (SLS) (2 compulsory parts)**

This is designed for the student who has a background in musical performance.

- Musical Perception and Analysis
- Solo Performance: voice or instrument, one or more recitals

**Group Performance Option (SLG) (2 compulsory parts)**

This is designed for students with a general interest in music, or those without prior experience, particularly members of ensembles.

- Musical Perception and Analysis
- Group Performance: two or more public performances

**Composition Option (SLC) (2 compulsory parts)**

This is designed for the student who has a background in musical composition.

- Musical Perception and Analysis
- Composition: two contrasting compositions

<p><b>Musical Perception and Analysis</b></p> <p>This part of the syllabus is common to all four programmes and consists of:</p> <ul style="list-style-type: none"> <li>➤ Study of Prescribed Work</li> <li>➤ Study of Musical Genres and Styles</li> <li>➤ Musical Investigation</li> </ul>
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**THE RELATIONSHIP BETWEEN SYLLABUS AND ASSESSMENT**

Syllabus Parts	Assessment Components	
<b>Musical Perception and Analysis</b> <b>(HL, SLS, SLG, SLC)</b> Study of Prescribed Work Study of Musical Genres and Styles Musical Investigation	<b>External Assessment</b>	<b>Listening Paper</b> <b>(HL, SLS, SLG, SLC)</b> Section A: Question 1 Section B: Questions 2-5
		<b>Musical Investigation</b> <b>(HL, SLS, SLG, SLC)</b>
<b>Solo Performance (HL, SLS)</b>	<b>Internal Assessment</b>	<b>Solo Performance (HL, SLS)*</b>
<b>Group Performance (SLG)</b>		<b>Group Performance (SLG)*</b>
<b>Composition (HL, SLC)</b>		<b>Composition (HL, SLC)*</b>

\*These components are internally assessed by the teacher and externally moderated by the IBO.

## SYLLABUS DETAILS

The IBO Music syllabus does not have units or modules from which the teacher constructs a course of study, but provides a framework which allows teachers to choose content and activities appropriate to their own and their students' interests and experience. When constructing the course the teacher is expected to bear in mind the Assessment Criteria and the specific requirements for the assessment tasks explained in this guide. In most circumstances it is expected that the course will include:

- class work related to Musical Perception and Analysis
- individual or group work developing Performance or Composition
- independent research for the Musical Investigation

### General

The only compulsory part of the syllabus, common to Higher Level (HL) and all Standard Level (SL) options is **Musical Perception and Analysis**; the only compulsory element in this section is the study of a work prescribed by the IBO.

Throughout the syllabus, teachers should refer to the Assessment Details and Assessment Criteria for guidance on the appropriate depth and breadth of study.

Although the Standard Level options require only Solo Performance, Group Performance or Composition, students will benefit from as broad a music education as possible. Performers will benefit from some experience of composition; composers will benefit from some experience of performance.

Throughout the course each student should record significant musical experiences and his/her responses to them. The student should compile notes on the study of particular pieces of music, both those studied by the whole group and those studied independently.

For the purposes of this guide, these definitions apply.

<b>Genre</b>	refers to music which is connected by socio-historical context, musical characteristics and geographical region. Music of the gamelan is a distinct and identifiable genre, as is western classical music.
<b>Style</b>	refers to particular characteristic musical features such as melodic structure, form, improvisation, harmony, articulation, rhythm, which are common to a set of musical pieces. Style may change within a genre as, for example, western classical music changed between the Renaissance and Baroque periods, or as jazz changed from Dixieland to be-bop to fusion.

### Musical Perception and Analysis (HL, SLS, SLG, SLC)

This part of the syllabus is compulsory and the requirements for Higher Level and all Standard Level options are the same. Teachers should refer to specimen and past Listening Papers for Study of Prescribed Work and Study of Musical Genres and Styles.

#### 1. Study of Prescribed Work

Students should study analytically, and have a thorough knowledge of, the work prescribed by the IBO. This will normally be a substantial piece of music which represents a significant musical development in its genre, era and socio-cultural context.

Details of the work, prescribed for two consecutive years' examinations, will be published in the *Vade Mecum*.

Teachers should refer to the published markschemes for the Listening paper, Section A.

#### 2. Study of Musical Genres and Styles

Students should study a wide range of musical examples chosen by the teacher from:

- different parts of the world
- different genres
- different styles

Through this study of a range of musical examples, chosen to develop their aural perception, students should learn about:

- musical structure, function and expressive character (as appropriate)
- musical elements: melody, harmony, rhythm, texture, tone colour
- musical terminology and notations
- historical and cultural contexts

The number of examples and the depth of study of each are not specified. Teachers should refer to the Assessment Details and Assessment Criteria, and to the specimen Listening Papers, for guidance on the appropriate range.

### 3. Musical Investigation

Students should carry out an independent musical investigation into the relationship between two identifiable and distinct musical genres, from any tradition, cultures or regions of the world, focusing on one or more pieces of music from each.

Musical Investigation presents an opportunity to pursue musics from cultures or traditions which are distant from the student's own time and/or culture, and which have a particular interest, emotional appeal or other importance for the student.

- Each investigation may develop from work begun in class, or may come from interests developed outside the school.
- Each student should choose musical genres for study in consultation with the teacher.
- The musical genres chosen for study should be sufficiently distinct, but not totally unrelated, so that similar and contrasting musical features can be described and analysed in depth.

#### Examples of Approaches to the Musical Investigation

The following examples illustrate ways in which the investigation might be approached.

Candidate A is a Chilean who grew up hearing indigenous Andean music at family gatherings. He taught himself to play electric guitar by listening to heavy metal, and occasionally performs at a club in Viña del Mar. His Musical Investigation analysed two pieces featuring the guitar legend Jimi Hendrix *The Star-spangled Banner* and *All Along the Watchtower*, in relation to a piece by David Dunne in which the computer-generated altered timbres resemble the sounds that the candidate himself produces on his guitar via external sound modifiers such as the distortion pedal.

Candidate B is a pianist from the United Kingdom. For her previous music teacher, she had composed a string quartet and the opening movement of a concerto for piano and orchestra. Her Musical Investigation pursued examples of Hungarian folk song in relation to the compositions of Bela Bartok.

### Solo Performance (HL and SLS)

#### Introduction

The course of study should build towards a presentation of one or more solo recitals which seeks to display the best that the student can achieve.

- A single instrument, or voice, meets the requirements, but more than one is permissible.
- Any instrument, voice, style or musical genre is permitted.
- The presentation may be compiled from pieces recorded on more than one occasion.
- No more than one piece may be included which does not feature the student as a soloist.

#### Recording

The purpose of recording performances is to allow the candidate subsequently to select a number of contrasting pieces to represent the best work for Internal Assessment.

Practice and Rehearsal

Students will need sustained practice and rehearsal, as traditionally associated with instrumental and vocal training. They should be given guidance on repertoire in order to develop their performing strengths.

### **The Presentation**

- This part of the syllabus focuses specifically on the solo performer, therefore only one piece may be included which does not feature the student as a soloist.
- The programme for the presentation should be suitable for the chosen instrument or voice, with attention given to the balance of styles and character, if appropriate.
- It is not necessarily in the student's interest to submit a presentation where the student performs on more than one instrument, or both sings and plays.

### **Composition (HL and SLC)**

The course should aim to develop compositional skills through practice and experiment. In most cases, the quality of a composition may be improved when a performance reveals defects or new creative possibilities. The number or kinds of exercises involved (for example, 'sketches' or finished pieces) are not prescribed but the assessment is based on compositions and recordings.

<b>Higher Level</b>	The final, notated versions of three compositions and an audio cassette recording of a performance of them are required.
<b>Standard Level</b>	The final, notated versions of two compositions and an audio cassette recording of a performance of them are required.

### **Higher Level and Standard Level**

- Compositions should demonstrate contrasts in content, nature and intent.
- Students may choose from a wide range of media, including traditional or electric instruments, home-made instruments, voices, electronically or computer-generated sounds, and digital sound sources or modifiers.
- Each student should be encouraged to write at least one piece where a version in sound is possible, through whatever means are available. Other pieces, however, may be composed which require performers, instruments or other resources not locally available.

Composition can begin from imitating other musics, or from the sheer joy of improvising. Sounds can then be explored experimentally to create music which can be purely aesthetic, purely functional, purely traditional, or designed to fulfil any other expressive purpose.

### **Written Statements**

Composition demands self-discipline and focus on the part of students as they shape and assemble the musical elements to express a particular mood, character, or other intended meaning. Throughout the programme, students should be encouraged to keep notes about their intentions in their work and their success or otherwise in achieving these.

Ideas, sources, working drafts and commentary on the nature and the process of composition should be kept in students' notebooks or files. These materials will be used to develop the candidate's written statement, which is a required part of the assessment at the end of the course.

# THEATRE

## NATURE OF THE SUBJECT

Theatre is a composite art that is forever evolving in new forms. It nourishes, sustains and extends the human spirit. It is a means of exploring society and relationships within it. Through it, there may emerge possibilities for individual and communal understanding. Theatre is about transformation. It is the application, through play, of energy and imagination to frame, reflect, expose, critique and speculate. These activities should engage and develop the sensibilities of all the students who participate in them. By studying theatre, and engaging with it practically, students will discover how elusive, fascinating and varied theatre can be.

At one extreme, theatre is national, institutionalized and commercial, while at the other it is provincial, subversive and experimental. The Diploma Programme theatre course is designed to encourage students to examine theatre in its diversity of forms around the world. This may be achieved through a critical study of the theory, history and culture of theatre, and will find expression through workshopping, devised work or scripted performance. Students will come to understand that the act of imagining, creating, presenting and critically reflecting on theatre in its past and present contexts embodies the individual and social need to investigate and find explanations for the world around us.

The theatre course emphasizes the importance of working individually and as a member of an ensemble. Students are encouraged to develop the organizational and technical skills needed to express themselves creatively in theatre. A further challenge for students following this course is for them to become aware of their own perspectives and biases and to learn to respect those of others. This requires a willingness to understand alternative views, to respect and appreciate cultural diversity, and to see the varied role that theatre plays in reflecting these. As a result, the theatre course can become a way for students to celebrate the international and intercultural dynamic that inspires and sustains some forms of contemporary theatre, while appreciating the specifically local origins that have always given rise to performance, and which, in many parts of the world, still do.

At the core of the theatre course lies a concern with clarity of understanding, critical thinking, reflective analysis, effective involvement and imaginative synthesis—all of which should be achieved through practical engagement in theatre.

### Theatre and prior learning

The theatre course at both HL and SL requires no previous experience in drama or theatre. Since the course is designed to enable students to experience theatre on a personal level, achievement in this subject is reflected in how students develop, extend and refine the knowledge, skills and attitudes necessary for studying this art form. Students' individual ability to be creative and imaginative, and to communicate in dramatic form, will be challenged and extended through the theoretical and practical content of the course.

The theatre course provides a relevant learning opportunity for a diverse range of students as it lays an appropriate foundation for further study in theatre, performing arts and other related subjects. In addition, by instilling discipline, and refining communication and group-work skills, it offers a valuable course of study for students who may wish to pursue a career or further education studies in areas unconnected to theatre.

### AIMS

The aims of the theatre course at HL and SL are to enable students to:

- experience and participate in a wide and varied range of theatre activities and develop proficiency in more than one area of theatre technique
- become familiar with forms of theatre from their own and different cultures
- explore different theatre traditions in their historical contexts
- develop academic skills appropriate for the study and understanding of theatre
- become reflective and critical practitioners in theatre
- develop the confidence to explore, to experiment and to work individually and collaboratively on innovative projects, which should involve challenging established notions and conventions of theatre
- understand the dynamic, holistic and evolving nature of theatre and the interdependencies of all aspects of this art form.

## OBJECTIVES

Having followed the theatre course at HL or SL, students will be expected to:

- demonstrate a theoretical and practical knowledge of theatrical traditions from more than one culture
- demonstrate an understanding of production elements and theatre practices
- evaluate critically a range of diverse performances
- engage practically in creating and presenting performances, which will include a basic level of technical proficiency
- reflect on their own development in theatre through continual self-evaluation and recording
- acquire appropriate research skills and apply them
- demonstrate an ability to interpret playtexts and other types of performance texts analytically and imaginatively
- demonstrate initiative and perseverance in both individual and group projects.

In addition, students at HL will be expected to:

- evaluate the relevance of selected research sources to personal practice
- demonstrate an understanding of the complex processes of performance, from its initial conception to the impact the final result leaves on spectators.

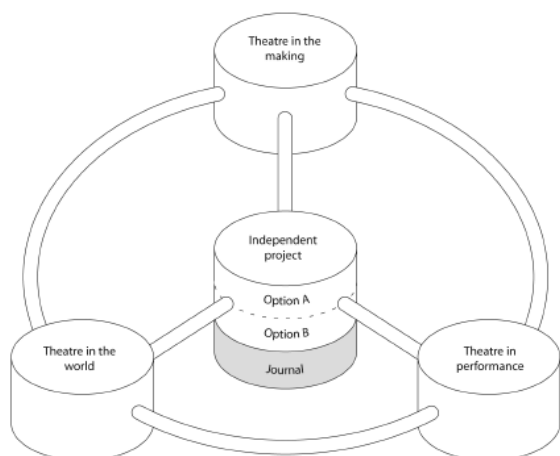
### Difference between SL and HL

Theatre students at both SL and HL are presented with a common core syllabus that encourages the development of certain skills, attributes and attitudes, as described in the “Objectives” section.

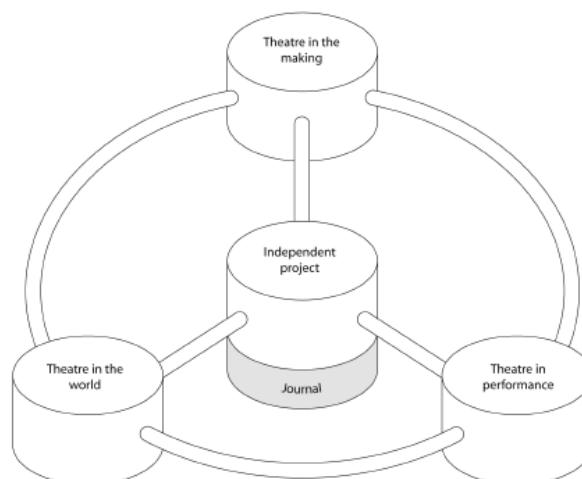
Due to the nature of the theatre course, there may be no great difference in the complexity or artistic merit of the work produced by students at SL and HL. However, the difference in recommended teaching times at SL and HL signals a clear distinction between the demands made on students. It is expected that students at HL will use the extra time available to develop their personal research and practice in theatre, and to extend their understanding of the ideas, practices and concepts encountered during the course.

The differences between the requirements of the theatre course at SL and HL are outlined below.

#### Higher level



#### Standard level



The theatre course consists of four interdependent components: theatre in the making, theatre in performance, theatre in the world and the independent project. Each component builds on the knowledge and skills gained in the others. The journal is a means of recording personal growth in theatre and lays a foundation for the independent project portfolio.

At HL, students choose either option A or option B for the independent project.

## COURSE COMPONENTS

	SL	HL
Theatre in the making	Study one stimulus and, from this, develop an action plan for performance.	Study two different stimuli and, from these, develop two action plans for performance.
Theatre in performance	Participate in at least two performances in two different roles/capacities.	Participate in at least three performances in three different roles/capacities.
Theatre around the world	Study at least two contrasting theatrical practices.	Study at least two contrasting theatrical practices.
Independent project	Create and present an original work inspired by any source, of any origin. Pursue a specialized interest with rigour and imagination.	Choose one of two options. <b>Option A:</b> Devising practice—alternative ways of realizing, and practical demonstration of, the elements of production. Or <b>Option B:</b> Exploring practice—examination and practical critical comparison of theories and the work of one or more forms/practitioners/theorists/genres.

## ASSESSMENT REQUIREMENTS

	SL	HL
<b>External assessment</b>		
Research investigation	1,500–1,750 words with supporting visuals	2,000–2,500 words with supporting visuals
Practical performance proposal	250-word written presentation with visual materials	250-word written presentation with visual materials and a 1,000–1,250-word rationale
<b>Internal assessment</b>		
Theatre performance and production presentation	20-minute oral presentation with 5–7 images	30-minute oral presentation with 7–10 images
Independent project portfolio	2,000 words from core syllabus	3,000 words from core syllabus and option A or B

<b>External assessment criteria</b>		
Research investigation	Three assessment criteria A: Research skills B: Task relevance C: Presentation	Four assessment criteria A: Research skills B: Task relevance C: Presentation D: Critique of sources
Practical performance proposal	Unique SL markband descriptors.	Unique HL markband descriptors.
<b>Internal assessment criteria</b>		
Theatre performance and production presentation	Three assessment criteria A: Analysis B: Synthesis C: Reflection	Four assessment criteria A: Analysis B: Synthesis C: Reflection D: Applied research
Independent project portfolio	Four assessment criteria A: Preparation B: Process C: Reflection D: Presentation	Five assessment criteria A: Preparation B: Process C: Reflection D: Presentation E: Application of research practice

## **SYLLABUS OUTLINE**

Throughout the two-year course there is an emphasis on learning through experience. Part of this process involves a continual reflection on that experience. From the beginning of the course, and at regular intervals, students are required to record significant experiences and their responses to them in a journal.

All areas of the HL and SL syllabus are complementary and can be delivered in ways to support and advance the learning outcomes of each. Teachers are encouraged to interpret the syllabus creatively according to local circumstances. No time allocation is given for any individual area of the syllabus because most activities may cover several different aspects of the course. Careful planning of class activities and productions, and also, where feasible, of visits to see external productions and workshops with theatre practitioners, is needed to make the best use of the time and resources available.

The syllabus has been designed to reflect the dynamic and transformative nature of theatre. It also clearly indicates a differential between HL and SL and allows for greater breadth and depth in the teaching and learning at HL.

### **Core syllabus (HL and SL)**

The theatre core syllabus at HL and SL consists of three interrelated areas. Students are required to explore these three areas from the perspective of dramaturg, director, performer, group ensemble, production team and spectator.

#### **Theatre in the making**

The focus of theatre in the making is on the process of theatre making rather than the presentation of theatre. It encompasses the acquisition and development of all skills required to create, present and observe theatre. It is exploratory in nature.

#### **Theatre in performance**

The focus of theatre in performance is on the application of skills developed in theatre in the making. This involves students in various aspects of presenting theatre, where their practical skills can be applied in different roles (as performers and as part of the production team), while also building upon the knowledge they have acquired in other areas.

#### **Theatre in the world**

The focus of theatre in the world is on a practical and theoretical exploration of a range of theatre traditions and cultural practices around the world. It allows students to explore the origins and traditions of a variety of theatre conventions and practices from diverse cultural and historical contexts.

### **Independent project (HL only)**

Students at HL are required to choose one from the following two options.

- Option A: Devising practice—allows students to develop and explore in depth the devising and actualization of a performance concept.
- Option B: Exploring practice—allows students to undertake a comparative study of theatre in advanced practice.

### **Independent project (SL only)**

Students at SL are required to pursue an independent interest in theatre, which may have arisen from their studies within the course.

## ASSESSMENT

The method of assessment used by the IBO is criterion-related. That is to say, the method of assessment judges each student in relation to identified assessment criteria and not in relation to the work of other students.

All components in the theatre course are assessed according to sets of assessment criteria and achievement level descriptors.

For each assessed component of the theatre course, a number of assessment criteria have been identified that relate to the objectives established for the theatre course.

- For each assessment criterion, there are a number of descriptors that each describe a specific level of achievement.
- The descriptors concentrate on positive achievement, although for the lower levels failure to achieve may be included in the description.
- The practical performance proposal is assessed using mark band descriptors. These more complex descriptors are used in a similar way to those for other components, although examiners are also required to assess where a piece of work belongs within the range of marks allocated to a particular descriptor.

### ASSESSMENT OUTLINE – Higher Level

#### EXTERNAL ASSESSMENT 50%

##### **Research investigation** 25%

Students are required to produce a research investigation of 2,000–2,500 words with supporting visual materials.

##### **Practical performance proposal** 25%

Students are required to produce a proposal of 250 words with supporting visual materials and a report of 1,000–1,250 words.

#### INTERNAL ASSESSMENT 50%

##### **Theatre performance and production presentation** 25%

Students are required to do an oral presentation lasting 30 minutes with 7–10 images.

##### **Independent project portfolio** 25%

Students are required to produce a portfolio of 3,000 words on their independent project (either option A or option B) and its connection to their experiences in the core syllabus.

### ASSESSMENT OUTLINE – Standard Level

#### EXTERNAL ASSESSMENT 50%

##### **Research investigation** 25%

Students are required to produce a research investigation of 1,500–1,750 words with supporting visual materials.

##### **Practical performance proposal** 25%

Students are required to produce a proposal of 250 words with supporting visual materials.

#### INTERNAL ASSESSMENT 50%

##### **Theatre performance and production presentation** 25%

Students are required to do an oral presentation lasting 20 minutes with 5–7 images.

##### **Independent project portfolio** 25%

Students are required to produce a portfolio of 2,000 words on their independent project and its connection to their experiences in the core syllabus.

# VISUAL ARTS

## NATURE OF THE SUBJECT

IB Visual Art Higher Level (HL) and Standard Level Option A (SLA) are two year courses spanning Years 11 and 12. Students over this time develop as artists through investigation, analysis and practical work developed on personal themes. Students explore their own artistic interests through a thematic approach which also connects to other cultures and the work of other artists. The nature of this course emphasises the integration of these elements as a way of developing as an artist. It is a course which enables students to investigate and develop individual artistic interests within the prescribed criteria for assessment.

## AIMS

The Visual Arts course at Higher Level and Standard Level Option A (SLA) aims to:

- provide students with opportunities to make personal, sociocultural and aesthetic experiences meaningful through the production and understanding of art
- exemplify and encourage an inquiring and integrated approach towards visual arts in their various historical and contemporary forms
- promote visual and contextual knowledge of art from various cultures
- encourage the pursuit of quality through experimentation and purposeful creative work in various expressive media
- enable students to learn about themselves and others through individual and, where appropriate, collaborative engagement with the visual arts.

## SYLLABUS OUTLINE

Each Visual Arts course consists of two linked compulsory parts, with many activities integrating work in the studio with workbook research.

In common to each course are **core elements**, which include the:

- introduction to art concepts, criticism and analysis
- acquisition of studio technical and media skills
- relation of art to sociocultural and historical contexts.

The difference in the expectations at Higher Level and Standard Level is indicated by the difference in recommended total teaching times (HL 240 hours; SL 150 hours).

### Higher Level (2 compulsory parts)

**240 hours**

This is designed for the specialist visual arts student, with creative and imaginative abilities, who may pursue the visual arts at university or college level.

#### Part A Studio Work

**168 hours**

Practical exploration and artistic production

#### Part B Research Workbooks (RWBs)

**72 hours**

Independent critical research and analysis, visual and written, in more than one culture

### Standard Level (2 compulsory parts)

**150 hours**

#### Option A (SLA)

This is designed for the visual arts student with creative and imaginative abilities.

#### Part A Studio Work

**105 hours**

Practical exploration and artistic production

#### Part B Research Workbooks (RWBs)

**45 hours**

Independent critical research and analysis, visual and written, in more than one culture

## **SYLLABUS DETAILS**

The International Baccalaureate Organisation Visual Arts syllabus provides a framework which allows teachers to choose content and activities appropriate to their own and their students' interests and experience. Part A, Studio Work, and Part B, Research Workbooks (RWB's) must be closely related and integrated.

### **Higher Level (HL) and Standard Level Option A (SLA)**

The content of the Higher Level course of study and that of Standard Level Option A may be similar but, due to the different amount of time recommended for each (HL 240 hours, SLA 150 hours) the work at Higher Level may be superior in quantity, maturity and quality. This differentiation may not always apply, for at least two reasons.

- The quantity of work generated by Standard Level students could be greater, because they might work quickly and be capable of a prolific output, in contrast to those painstaking Higher Level students whose output is relatively modest.
- The maturity and quality of the work of Standard Level students may be as good as that of Higher Level students because they might be very talented artists who have chosen this level because of other academic demands.

Many factors influence quantity and quality, including the pace at which students work, their ability and commitment, the techniques and media used, and the nature of the works produced. There is no constant relation between the number of works, the time spent on each, and their quality: a high standard can be achieved in both a large and small body of work, and vice versa.

### **Course Structure (HL, SLA)**

The course is divided into Part A (Studio Work) and Part B (Research Workbooks):

- core elements
- individual and collaborative exploration

Students' interests and aesthetic preferences play a prominent role in determining the course of study. Art history and criticism should be integrated into practical work in the studio, and should not be dealt with in isolation.

### **Core Elements (HL, SLA)**

The core includes:

- opportunities for practice in the use of various media and the acquisition of studio techniques
- an introduction to basic art concepts
- ways of extending research into practical work
- an introduction to the practice of arts criticism and analysis
- relating art to its sociocultural and historical contexts.

### **Individual and Collaborative Exploration (HL, SLA)**

From the base provided by the core elements, students are encouraged to move into areas of individual and collaborative exploration. Exploratory work should be done in consultation with the teacher.

### **Part A: Studio Work (HL, SLA)**

Candidates will be expected to:

- demonstrate through purposeful exploration an inquiring and integrative approach to a variety of visual phenomena
- synthesize art concepts and skills in works that are personally, socioculturally and aesthetically meaningful
- solve formal and technical problems encountered in studio practice
- exhibit technical skills and an appropriate use of media
- produce works of art with imagination and creativity through individual and, where appropriate, collaborative work
- produce work for an exhibition on a theme or themes

## Research Workbooks (HL, SLA)

Candidates will be expected to:

- demonstrate clearly in visual and written terms how personal research has led to an understanding of the topics or concepts being investigated
- analyse critically the meaning and aesthetic qualities of art forms using an informed vocabulary
- show some awareness of the cultural, historical and social dimensions of themes in more than one cultural context
- examine the visual and functional qualities of art from their own and other cultures for meaning and significance.

The purpose of the RWB's is, in all instances, to encourage personal research and discovery which function interactively with work in the studio. The workbooks should incorporate:

- analytical research
- discovery
- interpretation
- media experiments

## ASSESSMENT (HL, SLA)

The assessment in Visual Arts consists of an evaluation of each candidate's body of work as a whole. Both the finished **products**, and the **processes** of artistic research and development are assessed. This is done by the teacher internally at the end of Year 11 and through a moderation process involving external moderation, an exhibition and interview, at the end of Year 12.

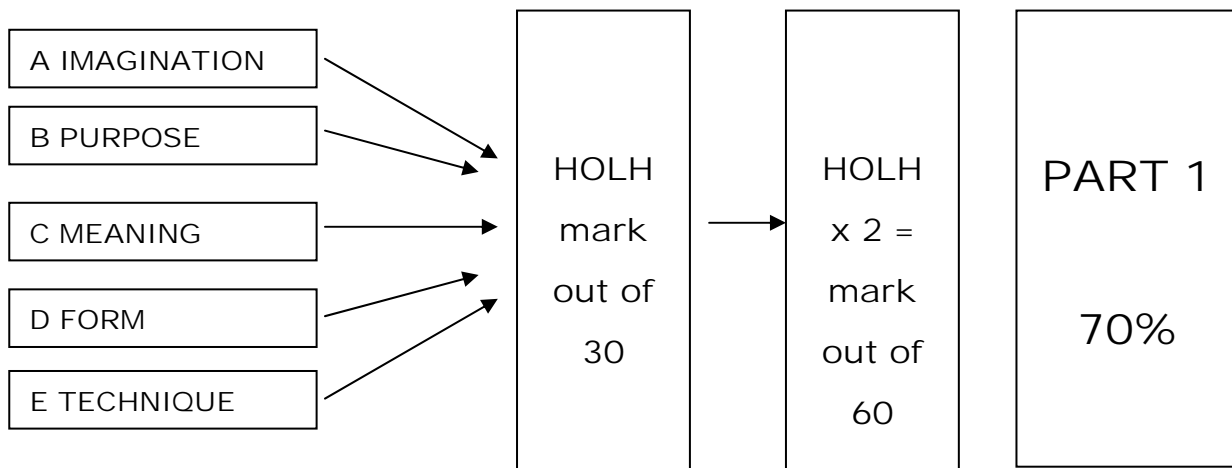
The method of assessment used by the IBO is criterion related. That is to say, the method of assessing each component is to judge in relation to identified assessment criteria and not in relation to the work of other candidates.

For **Studio Work** there are **five** assessment criteria for HL and SLA and **four** assessment criteria for the **Research Workbooks**. In addition, two general criteria are concerned specifically with the relationship between Studio Work and Research Workbooks. Growth and commitment are assessed primarily through the Studio Work component using Criterion G (GROW), whereas integration of the two components is judged primarily through the Research Workbooks using Criterion I (INTEG).

**ASSESSMENT CRITERIA**

**Studio Work 70% (HL, SLA)**

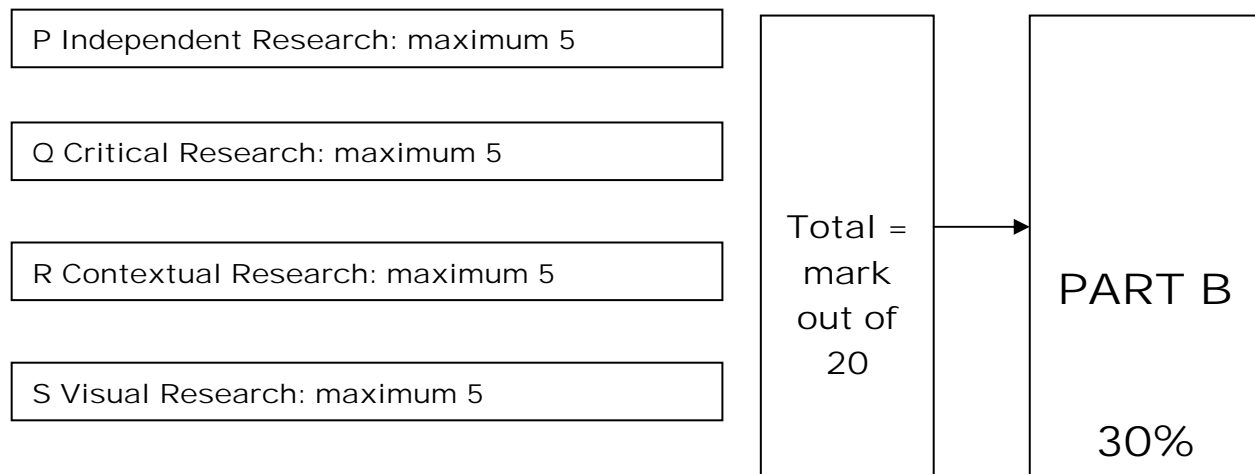
(Internally in Year 11, Exhibition and interview and external moderation in Year 12)



GENERAL CRITERION G GROW: maximum 10

**Research Workbooks 30%**

(Teacher Assessment in Year 11, Teacher Assessment and external moderation in Year 12)



GENERAL CRITERION I INTEGRATION: maximum 10

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