Guide to the Diploma Programme 2019
**WELCOME FROM THE HEAD OF SENIOR SCHOOL**

*To Year 11 and Year 12 IB Diploma Programme Students,*

This guide is designed to assist you in making the important choices about your subject options for the Year 11 and 12 IB Diploma Programme. Your tutor, teachers, Careers Advisor, Director of Studies, and IB Co-ordinator are valuable sources of information and guidance here at school.

Learning is no longer associated with just acquiring knowledge, the imperative is to apply knowledge, to create, innovate, solve problems and think independently. Years 11 and 12 are important years as they also lay the foundation for study post school.

In this context, at Canberra Girls Grammar School, we challenge and inspire young women to be internationally minded citizens; gaining the knowledge, developing the processes and acquiring the values to make a difference to the school and the wider community now and into the future.

Through our academic program, teachers and students at CGGS pursue:

- Opportunities for collaboration, divergent thinking, problem solving, team work, creativity and empathetic communication.
- An understanding of the ethical complexities of our local, national and global communities.
- The application of the processes, concepts and contextual knowledge that connects all academic disciplines
- Academic excellence and lifelong learning

We want to help you achieve the best you possibly can and be actively engaged in your learning. We encourage you to ask questions and to approach new topics confidently. Your teachers are very keen to help wherever they can so please seek their assistance if you are unsure about anything.

Balance in life is very important. I would encourage you to continue to be involved in the co-curricular program where there are many clubs and sports to choose from while remembering that time with family and your own leisure time is also very important.

**To Parents**

It is important that each student makes the right choices for Year 11 and 12. The key to this is to enable students to think about both their present interests and future careers in a rapidly changing tertiary and workplace environment. There will be opportunities to attend information sessions on options open to your daughters as the year unfolds.

Best wishes,

Peter Milligan - Head of Senior School
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IBO 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 organisation works with schools, governments and international organisations to develop challenging programmes of international education and rigorous assessment.

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

WHAT IS THE DIPLOMA PROGRAMME?

The IB Diploma Programme is designed as an academically challenging and balanced programme of education with final examinations that prepares students, normally aged 16 to 19, for success at university and life beyond. The programme is normally taught over two years and has gained recognition and respect from the world’s leading universities.

UNIVERSITY RECOGNITION

The IB diploma is a passport to higher education. Universities around the world welcome the unique characteristics of IB Diploma Programme students and recognise the way in which the programme helps to prepare students for university-level education.

IB students routinely gain admission to some of the best-known universities in the world. Most of these institutions have established recognition policies for the IB diploma.

The IB maintains information about university recognition that is displayed on the Country information pages of its website.

We always advise that you read this information carefully and consult the School’s Careers Advisor or admissions office of any university in which you are particularly interested as this information can change.
ASSESSMENT

Students take written examinations at the end of the programme, which are marked by external IB examiners. Students also complete assessment tasks in the school, which are either initially marked by teachers and then moderated by external moderators or sent directly to external examiners.

The diploma is awarded to students who gain at least 24 points, subject to certain minimum levels of performance across the whole programme and to satisfactory participation in the creativity, action, service requirement. The highest total that a Diploma Programme student can be awarded is 45 points.

The International Baccalaureate assesses student work as direct evidence of achievement against the stated goals of the Diploma Programme courses.

The Diploma Programme goals provide students with:

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

Diploma Programme assessment procedures measure the extent to which students have mastered advanced academic skills in fulfilling these goals, for example:

- analysing and presenting information
- evaluating and constructing arguments
- solving problems creatively.

Basic skills are also assessed, including:

- retaining knowledge
- understanding key concepts
- applying standard methods.

In addition to academic skills, Diploma Programme assessment encourages an international outlook and intercultural skills where appropriate.

Assessment tasks are designed to support and encourage good classroom teaching and learning.

Student results are determined by performance against set standards, not by each student's position in the overall rank order.
THE IB LEARNER PROFILE

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

IB learners strive to be:

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

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

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

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

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

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

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

**Risk-takers** They approach unfamiliar situations and uncertainty with courage and forethought, and have the independence of spirit to explore new roles, ideas and strategies. They are brave and articulate in defending their beliefs.

**Balanced** They understand the importance of intellectual, physical and emotional balance to achieve personal well-being for themselves and others.

**Reflective** They give thoughtful consideration to their own learning and experience. They are able to assess and understand their strengths and limitations in order to support their learning and personal development.
COURSE AND CAREER ADVICE

Before making a decision to enroll in the Diploma Programme, students and parents may seek advice from the following staff:

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The Careers Advisor can provide information and guidance on matters relating to career decision-making, the courses offered as part of the Diploma Programme and requirements of entry into tertiary education. The careers room is located in the lower Gabriel Centre. Please contact Dr Jessica Dietrich by email: Jessica.dietrich@cggs.act.edu.au
DIPLOMA PROGRAMME CURRICULUM

The curriculum is modeled by a circle with six academic areas surrounding the three core requirements.

IB Diploma Programme students study six courses at higher level or standard level. Students must choose one subject from each of groups 1 to 5, thus ensuring breadth of experience in languages, social studies, the experimental sciences and mathematics. The sixth subject may be an arts subject chosen from group 6, or the student may choose another subject from groups 1 to 5.

At the school’s discretion, some courses may be offered on the IB Online platform, Pamoja.

In addition, the programme has three core requirements that are included to broaden the educational experience and challenge students to apply their knowledge and understanding.

The extended essay (EE) is a requirement for students to engage in independent research through an in-depth study of a question relating to one of the subjects they are studying.

Theory of knowledge (TOK) is a course designed to encourage each student to reflect on the nature of knowledge by critically examining different ways of knowing (perception, emotion, language and reason) and different kinds of knowledge (scientific, artistic, mathematical and historical).

Creativity, Action, Service (CAS) requires that students actively learn from the experience of doing real tasks beyond the classroom. Students can combine all three components or do activities related to each one of them separately.

Normally:
- three of the six subjects are studied at higher level (courses representing 240 teaching hours)
- the remaining three subjects are studied at standard level (courses representing 150 teaching hours).

The key features of the Diploma program are:
- a broad and balanced curriculum
- flexibility of choice within a structure
- concurrency of learning
- development of international understanding
- rigorous assessment
- community service
- develops research skills, critical thinking and enquiring skills
- reflection
CORE REQUIREMENTS

Community Action Service (CAS)
The CAS requirement is a fundamental part of the programme and takes seriously the importance of life outside the world of scholarship, providing a refreshing counterbalance to academic studies.

Creativity is interpreted broadly to include a wide range of arts activities as well as the creativity students demonstrate in designing and implementing service projects.

Action can include not only participation in individual and team sports but also taking part in expeditions and in local or international projects.

Service encompasses a host of community and social service activities. Some examples include helping children with special needs, visiting hospitals and working with refugees or homeless people.

Students are expected to be involved in CAS activities for the equivalent of at least three hours each week during the two years of the programme.

Each school appoints a CAS supervisor who is responsible for providing a varied choice of activities for students. Programmes are monitored by IB regional offices.

A system of self-evaluation encourages students to reflect on the benefits of CAS participation to themselves and to others, and to evaluate the understanding and insights acquired.

Extended Essay
The extended essay is an independent, self-directed piece of research, culminating in a 4,000-word paper. As a required component, it provides:

- practical preparation for the kinds of undergraduate research required at tertiary level
- an opportunity for students to engage in an in-depth study of a topic of interest within a chosen subject.

Emphasis is placed on the research process:

- formulating an appropriate research question
- engaging in a personal exploration of the topic
- communicating ideas
- developing an argument.

Participation in this process develops the capacity to:

- analyse
- synthesise, and
- evaluate knowledge.

Students are supported throughout the process with advice and guidance from a supervisor.
Theory of Knowledge (TOK)

Theory of Knowledge (TOK) provides a forum for discussion supporting the interdisciplinary approach of IB in which students develop as critical knowers. Students are encouraged to recognise that the connections between their different subjects are dependent upon understanding the different ways in which they know.

TOK extends students: it develops a spirit of open-mindedness, lifelong learning, discovery and self-reliance. It inspires a sense of responsibility towards all members of the community, encouraging the development of attitudes and traits that will be respected by others, such as intellectual resilience and broad thinking, analytical perceptiveness and empathy.

Knowing starts not with the right information, but with the right questions.

We may know that: 2+2=4, we can ride a bicycle, we believe in God, Angharad is our friend, we hate mushrooms, mum is angry with us, CGGS was founded in 1926, and litmus paper turns red in acid. We rarely, if ever, consider how we know these things and that it is obvious that we do not really mean the same thing by the word ‘know’ when we use it in each of these examples.

TOK explores a range of Ways of Knowing, or WOKs, in an environment that empowers students through assisting them to take responsibility for their own knowing. It requires them to constantly reflect on how the application and prioritisation of different WOKs in different subject areas influences how and what we know.

As well as the five Areas of Knowledge (AOKs) intrinsic to the six IB groups, ethics, religious knowledge systems and indigenous knowledge systems are added, constituting eight AOKs in all. Every AOK tends to rely upon particular WOKs to investigate the world from a specific perspective. TOK encourages students to both identify these WOKs and consider what impact a shift in priorities might have. As a scientist, Einstein, claimed imagination was the most important faculty in the quest for scientific knowledge. “If you want your children to be intelligent,” he once famously remarked, “read them fairy stories.”

Perception

What can give us surer knowledge than our senses? With what else can we distinguish the true from the false?  

(Lucretius)

Using our senses (empiricism) to understand the world is amongst the most favoured ways of knowing in modern Western society. Yet, if I sit in a field for a day and watch the sun, I see it travel through the sky. How reliable, then, is perception as a means of knowing reality?

Reason

Once you have eliminated the impossible, whatever remains, however improbable, must be the truth.  

(Spock – but he stole it from Sir Arthur Conan Doyle)

We probably think of rationalism most often in relation to Philosophy and Mathematics. It seems a safe way to arrive at truth, certain knowledge. Perhaps; however, deductive thinking is quite different to inductive thinking. If I am in the Matrix, does rational thought really help?

Emotion

I want to know what love is; I want you to tell me.  

(Foreigner)

Empathy is crucial in real communication, in constructing moral codes and in motivating people to care for others. The analysis of novels depends upon an emotional response to the text. Many would argue that it is our capacity for emotion which makes us truly human.
Faith

The story of Christ is simply a true myth, a myth working upon us in the same way as others, but with this tremendous difference that it really happened. (C S Lewis)

Whether one believes in a god or does not, one has faith in one’s position. Science is not possible without faith; one must believe in the scientific method as a means of providing knowledge of the world in order to be a scientist.

Language

Human beings do not live in the objective world alone but are very much at the mercy of the particular language which has become the medium of expression of their society. (Edward Sapir)

Usually, we think of language as a way in which we express knowledge; but, we also use language to create knowledge; some would argue to create reality.

Intuition

I... dozed ... the atoms were gambolling before my eyes... But look! What was that? One of the snakes had seized hold of its own tail... let us learn to dream gentlemen. (Friedrich August von Kekulé)

Kekulé’s dream led to the proposal that the molecules of certain important organic compounds are not open structures but closed chains. Einstein argued that, “(t)he supreme task of the physicist is to arrive at universal elementary laws from which the cosmos can be built up by pure deduction. There is no logical path to these laws; only intuition...”

Memory

I don’t know who I am. I don’t remember. (Merlin (Scatterlings, Isobelle Carmody)

If there is such a thing as ‘me’ that is consistent over time and space, then it is dependent upon memory for its existence. Memory does more than store knowledge; it is a means in which we create knowledge. We take different memories and weave them together to make new knowledge.

Imagination

The problem with Christians is that they don’t read enough science fiction! (Unknown Salvation Army Officer in Belconnen Mall)

What this officer was getting at was that those who create the future first envision it. They use imagination to construct a picture of what they want the society of tomorrow to look like and on that basis create agendas for the present.

TOK Structure and Expectations at CGGS

TOK is allocated three periods per cycle in the school timetable. In addition, a weekend is held for Year 11 in Term 4.

TOK is the ubiquitous element in the IB. While the allocated periods provide time for specific skilling in and discussion of knowledge issues, students need to recognise that consistent critical self-reflection forms an essential aspect of the IB Programme. It is this intellectual honesty that represents a hallmark of IB. As such, TOK provides both the framework and the metalanguage to enable students to engage all their subjects at a sophisticated level.
Group 1 – Language A: Language And Literature

English: Language and Literature SL & HL

Most CGGS IB Students take a course in English – Language A: Language and Literature. The programme aims to promote an appreciation of the wealth and subtleties of the language, clear expression, and precise presentation of an argument and understanding of both oral and written discourse. It encourages the student to gain a broader understanding of both their own and other cultures through the study of a range of texts, both literary and non-literary.


ASSESSMENT

For both Standard and Higher Level, assessment consists of 70% external assessment, further divided into 50% on the final examination performance (Paper 1 -25% and Paper 2 -25%), 20% on written tasks (SL = 1, HL = 2), which is internally set and externally assessed, and a further 30% on internal oral assessment (Individual Oral Commentary and Further Oral Activities) which is externally moderated.

Language A: Literature (School Supported Self-Taught Languages)

For students fluent in a mother tongue language other than English, there is an option of taking a School Supported Self-Taught Language A course.

School Supported Self-Taught languages are offered as Literature courses at Standard Level only. Assessment consists of 100% external assessment, further divided into 50% on the final examination performance (Paper 1 -25% and Paper 2 -25%), 25% on the Written Assignment which is internally set and externally assessed, and a further 25% on oral assessment (Individual Oral Commentary and Individual Oral Presentation).

For students also taking English: Language and Literature, the successful completion of a second Language A course results in the achievement of an IB Bilingual Diploma. For students taking English as a Second Language (Group 2: Language Acquisition), a Group 1 School Supported Self-Taught Language must be taken to satisfy the requirements of the Diploma Programme.

School Supported Self-Taught languages require students to manage their own learning, with support from a mother-tongue tutor, who in turn receives support from the CGGS English faculty. Payment of the tutor is arranged directly by the student’s family.
Group 2 – Language Acquisition

Language B

Chinese
English
French
German
Japanese
Classical Latin
Ab initio Spanish
SL or HL
SL or HL
SL or HL
SL or HL
SL or HL
SL or HL
SL

There are five possibilities for Group 2 Language studies:

- **Language B (English, French, German, Japanese and Chinese)** for students with prior language study, offered by the school
- **Language B (Other Language)** – for students with prior language study, via a tutor or online Pamoja course, paid for by the parents/guardians
- **Classical (Latin)** – for students with prior language study
- **Ab initio (Spanish)** – for language students who have had no or little exposure to the language.

Language B and Classical are offered at Standard Level (SL) and Higher Level (HL). **Students wishing to select HL must discuss this option with the Head of Languages Faculty before this decision is made.** Ab initio can only be offered at Standard Level.

Students not having studied a language previously or not able to continue with one of the above, are to be placed in Ab Initio Spanish.

Students may also take an additional language from those listed above within the Group 6 area of study.

The information below is an outline only. For more detailed information regarding the course content and assessment please, contact the relevant IB teachers for each language.

OUTLINE OF STUDY

**Language B – Chinese, English, French, German and Japanese**

- **Core Topics:** Communications and media, Global Issues, Social Relationships.
  - Optional Topics (at least 2): Cultural diversity, Customs and traditions, Health, Leisure, Science and Technology
  - In addition, HL students will study two literary pieces.
- **Skills:** Text handling, Written production, Speaking and Listening
- **Aims:** To prepare the learner to communicate effectively and appropriately in a range of situations in the chosen language.
- The course offers an insight into the culture of the countries where the language is spoken and provides an opportunity for enjoyment, creativity and intellectual stimulation.
- Students will be given maximum exposure to the Target Language.
Classical Languages – Latin

- There are three study areas: Study of the Language, Study of Literature and an Individual study.
- The central focus of the work is on the reading, discussion and literary analysis of selected readings from major Roman authors.
- In addition, grammatical analysis of the reading texts continues, and is further developed through separate programs involving independent translation from Latin into English and from English into Latin.
- Aims: to develop the ability to respond critically to the literature read, to develop sufficient linguistic skills and knowledge of how language works to enable them to read Latin independently, develop sensitivity to the meaning and appropriate use of English words in context.

Ab Initio – Spanish

- Themes: Individual & Society, Leisure and Work, Urban & Rural Environment. These three themes are made up of 20 topics.
- Skills: Reading, Writing, Listening and Speaking will be developed through the use of authentic documents and a range of texts in different registers and styles.
- Aims: The study aims to develop the students’ ability to communicate effectively, and to deal with familiar and practical needs in the language. It also aims to provide a solid foundation for further language study and to encourage a positive attitude to the learning of other languages and to their speakers.
- Cultural elements will be integrated through a study of the topics listed above.
- Students will be given maximum exposure to the target language.

ASSESSMENT

Language B

External assessment - 50% of the marks. The written examinations are in November of the second year of study. Paper 1 is text handling and Paper 2 is a written response.

Written assignment – 20%

Internal Assessment - Oral component – 30%
(Individual Oral 20%, Interactive Oral 10%),

Ab Initio

External assessment - 55% of the marks. The written examinations are in November of the second year of study. Paper 1 is text handling and Paper 2 is a written response.

Written assignment – 20%

Internal Assessment - Oral component – 25%
(Individual Oral)
Group 3 – Individuals and Societies

Economics SL or HL

Economics is a dynamic social science that is fundamentally about the concept of scarcity and the problem of resource allocation. It examines the challenges common to all societies in the search for acceptable levels of wellbeing. There is a vast gulf separating the richest and poorest inhabitants of the world – the dilemma of economies and economists is how to allocate scarce resources to their infinite and competing uses in a manner that might be considered fair, just and sustainable. IB Economics is ideally suited as a preparation for first year economics courses at universities and other tertiary institutions.

CONTENT

1 Microeconomics
   • Competitive markets: Demand and supply
   • Market equilibrium
   • Role of price mechanism, elasticity
   • Market efficiency
   • Market failure

2 Macroeconomics
   • The business cycle
   • Macroeconomics models; AD/AS analysis, full employment, Keynesian v neoclassical approach
   • Demand-side and supply-side policies
   • Unemployment and inflation
   • Distribution of income, Multiplier
   • Fiscal policy / Monetary policy

3 International economics
   • Reasons for trade
   • Free trade and protectionism
   • Economic integration
   • WTO (World Trade Organisation)
   • Balance of payments; measurement, structure and problems
   • Exchange rates
   • Terms of trade.
   • Trade creation and diversion
   • Exchange rate systems
   • Marshall-Lerner and J Curve theory
   • Elasticity of imports and exports

4 Development economics
   • Growth v development
   • Consequences of growth
   • Barriers to growth and/or development
   • Growth and development strategies
   • Foreign Direct Investment (FDI)
   • Evaluating growth and development strategies

ASSESSMENT

SL Course
External Assessment (80%)
2 exams (2x1hr 30 mins)
HL Course
External Assessment (80%)
3 exams (2x1hr 30 mins; 1x 1hr)

Internal Assessment (20%)
3 commentaries (maximum 750 words)

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**Geography SL or HL**

Geography is concerned with place. Students develop their understanding of the nature and causes of differences between places. Through Geography, students investigate these differences in patterns of human distribution, interrelationships between human society and the physical environment, people’s use of the Earth over time and space, and how these differences are related to people’s cultures and economies.

All students undertake fieldwork investigation as part of their internal assessment.

**CONTENT**

Over two years of study, students will undertake the following units of work:

- Population distribution - changing population
- Global climate - vulnerability and resilience
- Global resource consumption and security
- Leisure, tourism and sport
- Food and health
- Urban environments

**Optional Units (SL study 2 and HL study 3)**

- Freshwater - drainage basins
- Oceans and coastal margins
- Extreme environments
- Geophysical hazards
- Power, places and networks
- Human development and diversity
- Global risks and resilience

**ASSESSMENT**

Assessment is largely based on externally marked examination papers. The student selected fieldwork investigation, which is internally assessed and externally moderated, accounts for 25% of the SL assessment and 20% of the HL assessment.

**SL Course**

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>External Assessment</td>
<td>(75%)</td>
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<tr>
<td>Internal Assessment</td>
<td>(25%)</td>
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**HL Course**

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<thead>
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<th>Assessment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>External Assessment</td>
<td>(80%)</td>
</tr>
<tr>
<td>Internal Assessment</td>
<td>(20%)</td>
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</tbody>
</table>
History SL or HL

History is offered as a Group 3 subject at CGGS. Students at standard level (SL) and higher level (HL) are presented with a syllabus that has a common core consisting of prescribed subjects and topics in world history. In addition, students at HL are also required to undertake an in-depth study of three sections from one of the HL regional options. While many of the skills of studying history are common to both SL and HL, the difference in recommended teaching hours at SL and HL signals a clear distinction between the demands made on students, with the greater depth of study required for HL.

CONTENT

SL Syllabus:
- The study of one prescribed subject
- The study of two world history topics
- A historical investigation

HL Syllabus
- The study of one prescribed subject
- The study of two world history topics
- The study of three sections from one HL regional option
- A historical investigation

Prescribed subject
- Rights and protest:
  This prescribed subject focuses on struggles for rights and freedoms in the mid-20th century; the civil rights movement in the US (1954-1965) and protests against apartheid in South Africa (1948–1964).

World History Topics
- Authoritarian states (20th century)
- Causes and effects of 20th-century wars

Higher Level Options: History of Europe
- European states in the inter-war years (1918–1939)
- Versailles to Berlin: Diplomacy in Europe (1919–1945)
- The Soviet Union and post-Soviet Russia (1924–2000)

ASSESSMENT

SL Assessment
- Paper 1: A source-based paper set on the prescribed subjects 30%
- Paper 2: An essay paper based on the world history topics 45%
- Internal assessment (IA): A historical investigation 25%

HL Assessment
- Paper 1: A source-based paper set on the prescribed subjects 20%
- Paper 2: An essay paper based on the world history topics 25%
- Paper 3: An essay paper on one of the four HL regional options 35%
- Internal assessment (IA): A historical investigation 20%
Psychology SL or HL

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 methodology and application of psychological research are key considerations in IB.

HL students complete all units including developing an understanding of qualitative research. SL students complete the three compulsory core units and choose to focus on either health psychology or abnormal psychology as the elective.

CONTENT

Three Compulsory Core Units:
- Biological level of analysis
- Cognitive level of analysis
- Sociocultural level of analysis

Elective Units:
- Health psychology
- Abnormal psychology

ASSESSMENT

The student selected research task, which is internally assessed and externally moderated, accounts for 20% of the HL assessment and 25% of the SL assessment.

SL Course
- External Assessment (75%)
- Internal Assessment (25%)

HL Course
- External Assessment (80%)
- Internal Assessment (20%)
**Group 4 – Experimental Sciences**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>SL or HL</td>
</tr>
<tr>
<td>Chemistry</td>
<td>SL or HL</td>
</tr>
<tr>
<td>Environmental Systems &amp; Societies</td>
<td>SL (Group 3 and Group 4 subject)</td>
</tr>
<tr>
<td>Physics</td>
<td>SL or HL</td>
</tr>
</tbody>
</table>

All of the Experimental Sciences have the same course structure.

**Standard Level (SL)**
The SL course is taught in 150 hours over two years (or one year in the case of ESS). It consists of core material (95 hours), a ‘Group 4 Project’ (10 – 15 hours) and one option (15 hours). The content is divided into a number of topics.

**Higher Level (HL)**
The HL course is taught in 240 hours over two years. It consists of the core material (95 hours), a ‘Group 4 Project’ (10 – 15 hours), additional HL material (90 hours), and one option (25 hours).

**ASSESSMENT**

**Internal Assessment**
The overall contribution of internal assessment to the total mark is 20%. This is made up of two components:
1. Practical scheme of work; and
2. Group 4 Project

**Practical scheme of work**
The practical and investigative activities that students carry out for their internal assessment are termed the ‘practical scheme of work’. This scheme will include short laboratory practical exercises, longer projects and data analysis exercises. The teacher judges the performance of students using assessment criteria. These criteria define the practical skills expected of students.

The practical scheme of work is approximately 24% of the course time. This is about 40 hours for the SL course and 60 hours for the HL course.

**Group 4 Project**
Students will investigate a ‘problem’ or ‘issue’ which emphasises the processes involved in scientific investigations rather than the products of such investigations.

All students must perform activities that occupy 10 – 15 hours and form the Group 4 Project. The project is separated into three phases: (1) Reflection (planning), (2) Action, and (3) Evaluation. The issue chosen may form the basis of the extended essay or lead to activities that can be incorporated in the CAS program.

**External Assessment**
Examinations are held in November for both SL and HL courses. Each course is assessed by three examination papers worth a total of 80% of the assessment.

**Paper 1** is made up of multiple choice questions related to the understanding and application of information and techniques. The duration of this paper is 45 minutes for SL and 60 minutes for HL.

**Paper 2** is made up of short answer questions that test common syllabus material for the SL and HL courses in greater depth. The duration of this paper is 1 hour 15 minutes for SL and 2 hours 15 minutes for HL.

**Paper 3** comprises a compulsory set of short answer questions on the option undertaken by both SL and HL students. The duration of the paper is 1 hour for SL and 1 hour and 15 minutes for HL.
Biology SL or HL

To study Biology, candidates for the Diploma Programme should enroll in Biology 1 in Year 11.

<table>
<thead>
<tr>
<th>CONTENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The SL course</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Topic 1</th>
<th>Cell Biology</th>
<th>Topic 2</th>
<th>Molecular Biology</th>
<th>Topic 3</th>
<th>Genetics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic 4</td>
<td>Ecology</td>
<td>Topic 5</td>
<td>Evolution and Biodiversity</td>
<td>Topic 6</td>
<td>Human Physiology</td>
</tr>
</tbody>
</table>

There are four option topics to select for SL

- **Option A** Neurobiology and Behaviour
- **Option B** Biotechnology & Bioinformatics
- **Option C** Ecology and Conservation
- **Option D** Human Physiology

<table>
<thead>
<tr>
<th>The HL course</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Topic 1</th>
<th>Cell Biology</th>
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<td>Topic 6</td>
<td>Human Physiology</td>
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</table>

There are four option topics to select for HL

- **Option A** Neurobiology and Behaviour
- **Option B** Biotechnology & Bioinformatics
- **Option C** Ecology and Conservation
- **Option D** Human Physiology

<table>
<thead>
<tr>
<th>Additional Higher Level (AHL)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Topic 7</th>
<th>Nucleic Acids</th>
<th>Topic 8</th>
<th>Metabolism, Cell Respiration &amp; Photosynthesis</th>
<th>Topic 9</th>
<th>Plant Biology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic 10</td>
<td>Genetics and Evolution</td>
<td>Topic 11</td>
<td>Animal Physiology</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Chemistry SL or HL

To study Chemistry, candidates for the Diploma Programme should enroll in Chemistry 1 in Year 11.

CONTENT

The SL Course

<table>
<thead>
<tr>
<th>Topic 1</th>
<th>Topic 2</th>
<th>Topic 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative Chemistry</td>
<td>Atomic Structure</td>
<td>Periodicity</td>
</tr>
<tr>
<td>Topic 4</td>
<td>Topic 5</td>
<td>Topic 6</td>
</tr>
<tr>
<td>Bonding</td>
<td>Energetics</td>
<td>Kinetics</td>
</tr>
<tr>
<td>Topic 7</td>
<td>Topic 8</td>
<td>Topic 9</td>
</tr>
<tr>
<td>Equilibrium</td>
<td>Acids and Bases</td>
<td>Oxidation and Reduction</td>
</tr>
<tr>
<td>Topic 10</td>
<td>Topic 11</td>
<td>Option</td>
</tr>
<tr>
<td>Organic Chemistry</td>
<td>Measurement &amp; Analysis</td>
<td>Medicinal Chemistry</td>
</tr>
</tbody>
</table>

The HL Course

The HL course is taught in 240 hours over two years. It consists of the SL core material (80 hours), a ‘Group 4 Project’ (10 – 15 hours), additional HL material (55 hours), an internally assessed investigation – practical exercises (45 – 50 hours). The additional content is divided into 9 topics with the same titles as the SL topics 2 – 11 inclusive; plus the option.
Environmental Systems and Societies SL

The Environmental systems and societies course is only offered at SL. There is no HL option available. **Environmental systems and societies is a one-year course.**

Because this is an interdisciplinary course, students can study this course and have it count as either an individuals and societies or a science course, or both. This gives students the opportunity to study (an) additional subject(s) from any group. As an interdisciplinary subject, Environmental systems and societies is designed to combine the techniques and knowledge associated with group 4 (the experimental sciences) with those associated with group 3 (individuals and societies). The prime intent of this course is to provide students with a coherent perspective of the interrelationships between environmental systems and societies; one that enables them to adopt an informed personal response to the wide range of environmental issues that they will inevitably face.

**CONTENT: The SL Course**

<table>
<thead>
<tr>
<th>Topic 1: Systems and models</th>
<th>Topic 5: Pollution Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic 2: The Ecosystem</td>
<td>Topic 6: The Issue of Global Warming</td>
</tr>
<tr>
<td>Topic 3: Human population, carrying capacity and resource use</td>
<td>Topic 7: Environmental value systems</td>
</tr>
<tr>
<td>Topic 4: Conservation and biodiversity</td>
<td></td>
</tr>
</tbody>
</table>
Physics SL or HL

To study Physics, candidates for the Diploma Programme should enroll in Physics 1 in Year 11.

CONTENT

The SL Course

The SL course is taught in 150 hours over two years. It consists of the core material (95 hours), one optional topic (15 hours), a ‘Group 4 Project’ (10 hours) an internally assessed investigation – practical exercises (30 hours).

Common Core and Option

<table>
<thead>
<tr>
<th>Topic 1</th>
<th>Measurements and uncertainties</th>
<th>Topic 2</th>
<th>Mechanics</th>
<th>Topic 3</th>
<th>Thermal physics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic 4</td>
<td>Waves</td>
<td>Topic 5</td>
<td>Electricity and magnetism</td>
<td>Topic 6</td>
<td>Circular motion and gravitation</td>
</tr>
<tr>
<td>Topic 7</td>
<td>Atomic, nuclear and particle physics</td>
<td>Topic 8</td>
<td>Energy production</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There are four option topics to select for SL

<table>
<thead>
<tr>
<th>Option A</th>
<th>Relativity</th>
<th>Option B</th>
<th>Engineering Physics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option C</td>
<td>Imaging</td>
<td>Option D</td>
<td>Astrophysics</td>
</tr>
</tbody>
</table>

The HL Course

The HL course is taught in 240 hours over two years. It consists of the core material (95 hours), additional higher level material (60 hours), one optional topic (25 hours), a ‘Group 4 Project’ (10 hours) an internally assessed investigation – practical exercises (50 hours)

Additional Higher Level (AHL)

<table>
<thead>
<tr>
<th>Topic 9</th>
<th>Wave Phenomena</th>
<th>Topic 10</th>
<th>Fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic 11</td>
<td>Electromagnetic induction</td>
<td>Topic 12</td>
<td>Quantum and nuclear physics</td>
</tr>
</tbody>
</table>


Group 5 – Mathematics

Mathematical Studies SL
Mathematics SL or HL

Students will be given a recommendation from their Year 10 mathematics teacher as to which course is the most appropriate. This recommendation is made using all available information including previous years’ achievements and we strongly advise that you do not attempt to study at a higher level than recommended.

Mathematical Studies SL
Mathematical Studies is available at SL only. It 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. Candidates taking this course should have achieved a B grade or higher in Level 1 Intermediate Mathematics or any grade in Advanced Mathematics in Year 10. This course is not an option for girls who have studied at Level 2 Support in Year 10.

Mathematics SL
Mathematics SL caters for students who already possess a solid knowledge of mathematical concepts in Number, Algebra and Graphing, Geometry and Statistics. These students will be preparing for future studies in subjects such as chemistry, economics, psychology and business administration. It is very strongly recommended that suitable candidates have achieved a B grade or higher in Advanced Mathematics in Year 10 or have completed the Extension Mathematics course. Students who have been in the Intermediate stream or below cannot take this course.

Mathematics HL
Mathematics HL caters for students who already possess an excellent background in mathematics and who have very good analytical and technical skills in Number, Algebra and Graphing, Geometry and Statistics. They will be expecting to include mathematics as a major component of their tertiary studies, either as a subject in its own right or within courses such as actuarial studies, operations research, physics, engineering and technology. They could also take this subject because they have a strong interest in mathematics and enjoy meeting its challenges and engaging with its problems.

It is very strongly recommended that suitable candidates have achieved an A or high B grade in Level 1 Extension Mathematics in Year 10.

CONTENT

Mathematical Studies SL
- Introduction to the graphic display calculator
- Number and algebra
- Sets, logic and probability
- Functions
- Geometry and trigonometry

Mathematics SL
- Statistics
- Introductory differential calculus
- Mathematical Models
Mathematics SL
- Algebra
- Functions and Equations
- Circular functions and Trigonometry
- Vectors
- Statistics and Probability
- Calculus

Mathematics HL
- Algebra
- Functions and Equations
- Circular functions and Trigonometry
- Vectors
- Statistics and Probability
- Calculus

In addition to the core syllabus, there is a choice of one optional topic from:
- Statistics and Probability
- Sets, relations and groups
- Series and Differential Equations
- Discrete Mathematics
- Further Calculus

ASSESSMENT

Mathematics Studies SL
External Assessment (80%)
Internal Assessment (20%)

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. It is internally assessed by the class teacher and externally moderated.

Mathematics SL
External Assessment (80%)
Internal Assessment (20%)

The Mathematical Exploration is a short report written by the student on a topic chosen by her, and it should focus on the mathematics of that particular area. The emphasis is on mathematical communication (including formulae, diagrams, graphs and so on), with accompanying commentary, good mathematical writing and thoughtful reflection. It is internally assessed by the class teacher and externally moderated.

Mathematics HL
External Assessment (80%)
Internal Assessment (20%)

The Mathematical Exploration is a short report written by the student on a topic chosen by her, and it should focus on the mathematics of that particular area. The emphasis is on mathematical communication (including formulae, diagrams, graphs and so on), with accompanying commentary, good mathematical writing and thoughtful reflection. It is internally assessed by the class teacher and externally moderated.
Group 6 – The Arts

Within this curriculum group, students may choose from Music, Theatre or Visual Arts or may select one further subject from Groups 2, 3, or 4. If a further subject from one of the earlier curriculum groups is selected it allows students the option of an element of specialisation: either two languages, two humanities or two sciences.

Music SL or HL

The study of music in this course gives students the opportunity to explore and enjoy the diversity of music throughout different times and places. It encourages students to develop perceptual skills through a breadth of musical experiences, where they recognise, speculate, analyse, identify, discriminate and hypothesise in relation to music. In SL, students develop skills in either performing or creating in addition to their studies in musical perception, whereas HL students develop all three areas.

CONTENT

Music Perception and Analysis is compulsory for all students who take this course. It involves the study of two set works, and the study of a wide range of music genres and styles, including historical, contemporary, jazz and world music styles.

SL Course
Standard Level Music ideally suits a student who enjoys listening to music, thinking and writing about music and is interested in history and culture around music. In addition to Musical Perception, (which is the component of the course that is compulsory for Standard Level and Higher Level students,) Standard Level students must choose one of three options:

- Group performing (SLG). This is designed to suit a student who is an active member of a School ensemble and has an interest in music. OR
- Solo performing (SLS). This is designed for the student who has a background and experience in musical performance. OR
- Creating (SLC). This is designed for the student who has an interest in musical composition, using any media, including digital sound sources, traditional or electric instruments.

HL Course
This is designed for the specialist music student with a background in musical performance and an interest in composition, who may consider studying music at a tertiary level or who has a passion for performing, creating and listening to music. There are three areas of study:

- Musical Perception
- Creating. Students develop skills through exploration, control and development of musical elements.
- Solo performing. Students further develop their skills in solo performing and includes a series of Recital opportunities and public performances This is designed for the student who has a background and experience in musical performance and is currently undertaking private tuition on their instrument/voice.
ASSESSMENT

SL Course

External Assessment: (50%)
Listening Paper: (30%)
Musical Links Investigation: (20%)
Internal Assessment: (50%)

Students choose one of the following options:

SLG – A recording of group performances selected from pieces presented during two or more public performances, 20-30 minutes
SLS – A recording of solo performances selected from pieces presented during one or more public performance(s), 15 minutes
SLC – Two compositions with recordings and associated written work

HL Course

External Assessment: (50%)
Listening Paper: (30%)
Musical Links Investigation: (20%)

Internal Assessment: (50%)

Creating: Three pieces of coursework with recordings and associated written work (25%)

Solo performing: A recording of solo performances selected from pieces presented during one or more public performance(s), 20 minutes (25%)
Visual Arts SL or HL

The impulse to make art is common to all people. From earliest times, human beings have displayed a fundamental need to create and communicate personal and cultural meaning through art. Visual arts continually create new possibilities and can challenge traditional boundaries. This is evident both in the way we make art and in the way we understand what artists from around the world do. Theory and practice in visual arts are dynamic, ever changing and connect many areas of study and human experience through individual and collaborative production and interpretation.

New ways of expressing ideas help make visual arts one of the most interesting and challenging areas of learning and experience. The processes of designing and making art require a high level of cognitive activity that is both intellectual and affective. Engagement in the arts promotes a sense of identity and makes a unique contribution to the lifelong learning of each student. Study of visual arts provides students with the opportunity to develop a critical and intensely personal view of themselves in relation to the world.

AIMS

The aims of the visual arts course at HL are to enable students to:

- investigate past, present and emerging forms of visual arts and engage in producing, appreciating and evaluating these
- develop an understanding of visual arts from a local, national and international perspective
- build confidence in responding visually and creatively to personal and cultural experiences
- develop skills in, and sensitivity to, the creation of works that reflect active and individual involvement
- Take responsibility for the direction of their learning through the acquisition of effective working practices

ASSESSMENT

Throughout the course candidates will be given tasks to be attempted and completed using their portfolio and studio work. They will need to:

- Respond to and analyse critically and contextually the function, meaning and artistic qualities of past, present and emerging art, using the specialist vocabulary of the Visual arts.
- Develop and present independent ideas and practices, and explain the connections between these and the work of other artists.
- Explore and develop ideas and techniques for studio work through integrated contextual study and first-hand observations and practice.
- Develop and maintain a close relationship between investigation and a purposeful, creative process in studio work.

As the candidates’ portfolio and studio work develops, they will be encouraged to adopt a more independent way of working. Candidates will self-evaluate, referring to the assessment criteria and markbands. Teachers will give feedback to students every couple of weeks, giving candidates written and verbal critiques which refer to the assessment criteria and markbands.

(SLA)

Exhibition Studio work (40%)
Process portfolio (40%)
Comparative study (20%)

(HLA)

Exhibition Studio work (40%)
Process portfolio (40%)
Comparative study (20%)
Theatre SL or HL

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.

COURSE COMPONENTS

- Theatre in the making
- Theatre in performance
- Theatre around the World
- Independent project

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.

ASSESSMENT

External assessment- 50%

- Research investigation- 2,000–2,500 words with supporting visuals
- Practical performance Proposal- 250-word written presentation with visual materials and a 1,000–1,250-word rationale

Internal assessment- 50%

- Theatre performance and production presentation- 30-minute oral presentation with 7–10 Images.
- Independent project - 3,000 words from core syllabus and option A or B.
10 Reasons
why the IB Diploma Programme (DP) is ideal preparation for university

1. It increases academic opportunity
   Research shows that DP graduates are much more likely to be admitted to top universities than students holding other qualifications.

2. IB students care about more than just results
   Through creativity, action, service (CAS), you learn outside the classroom and develop environmental and artistic as well as intellectually.

3. It encourages you to become a confident and independent learner
   For example, the extended essay requires independent research through an in-depth study.

4. It’s an international qualification
   The DP is recognized globally by universities and employers.

5. Graduates are globally minded
   IB programmes encourage an international mindset, key for tomorrow’s global leaders.

6. The IB encourages critical thinking
   Learn how to analyze and evaluate issues, generate ideas and consider new perspectives.

7. DP students have proven time management skills
   Time management skills and good study habits support success in further education and the working world.

8. It assesses more than examination techniques
   Theory of knowledge (TOK) classes encourage you to make connections between subjects.

9. Subjects are not taught in isolation
   You are able to choose courses from six subject options and study subjects at different levels.

10. It encourages breadth and depth of learning
    *Based on IB research - www.ibo.org/research