IB SUBJECT HANDBOOK

Year 11-12

International Baccalaureate Diploma Programme

CALAMVALE
Community College
Building on Success

The IB requires all Diploma Programme students to study six (6) subjects, plus the three (3) core of Theory of Knowledge, CAS and the Extended Essay.

Students must select:

- A subject in Language and Literature from Group 1 (mother tongue subject)
- A subject in Language Acquisition from Group 2 (a second language)
- A subject in Individuals and Societies from Group 3
- A subject in Science from Group 4
- One Mathematics subject, either Mathematics: Analysis and Approaches or Mathematics: Applications and Interpretation
- A subject from The Arts from Group 6 **OR**

  An additional subject from Group 2, 3 or 4

Environmental Systems and Societies can be selected as a subject in Group 3 or 4 or both 3 and 4.

Table of Contents

Staff

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5	Curtin	Pamela	pcurt28@eq.edu.au	2	10 English B
6	Hu	Alec	nxhu0@eq.edu.au	2	11 Mandarin Ab initio
7	Salfate	Massiel	msalf1@eq.edu.au	2	11 & 12 Spanish ab initio
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9	Tseng	Ariel	atsen6@eq.edu.au	2	12 Mandarin ab Initio, 12 Mandarin SL
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11	Boland	Dawn	dbola13@eq.edu.au	3	10 Psychology
12	Bowhay	Rachel	rmpen0@eq.edu.au	3	Psychology
13	Green	Michael	mgree214@eq.edu.au	3	Psychology and maths
14	Harvey	Chris	charv168@eq.edu.au	3	11 and 12 ESS (composite)
15	Vidler	Kara	kxvid0@eq.edu.au	3	12 Business Management
16	Booth	Toby	trboo0@eq.edu.au	4	IB Bio 12s
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22	Cheng	Zac	zsche8@eq.edu.au	5	11&12 Maths AI
23	Cole	Yvette	ycole1@eq.edu.au	5	11 & 12 Maths AA; 12 Physics
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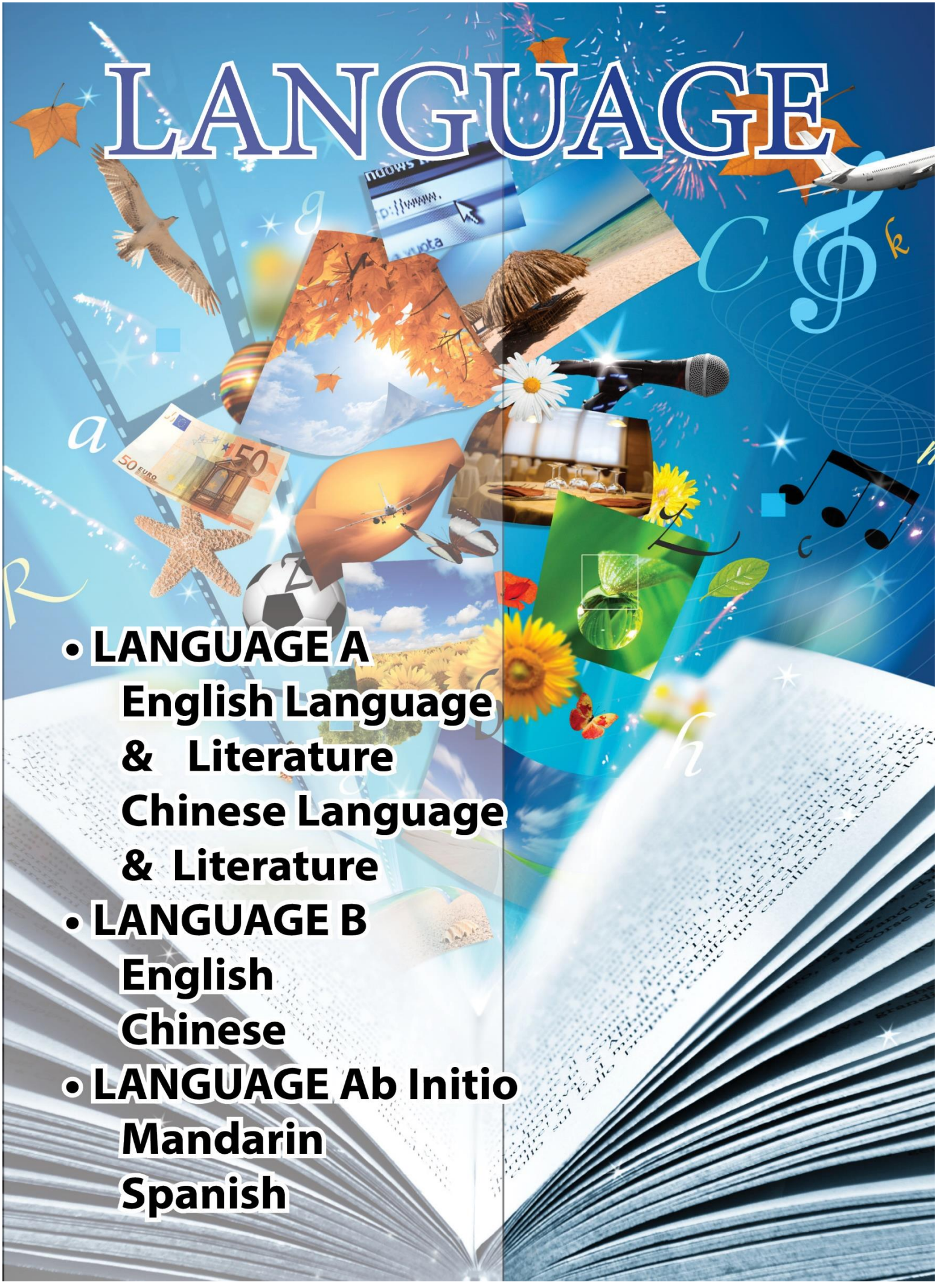
LANGUAGE



- **LANGUAGE A**
  - English Language & Literature
  - Chinese Language & Literature
- **LANGUAGE B**
  - English
  - Chinese
- **LANGUAGE Ab Initio**
  - Mandarin
  - Spanish

LANGUAGE A: LANGUAGE AND LITERATURE (English/Chinese)

Course Overview

The Language A: Language and Literature course aims to develop skills of textual analysis and the understanding that texts, both literary and non-literary, can relate to culturally determined reading practices.

The course also encourages students to question the meaning generated by language and texts. An understanding of the ways in which formal elements are used to create meaning in a text is combined with an exploration of how that meaning is affected by reading practices that are culturally defined and by the circumstances of production and reception.

The study of literature in translation from other cultures is especially important to IB DP students because it contributes to a global perspective. Texts are chosen from a variety of sources, genres and media.

The aims of Language A: Language and Literature courses are to:

• introduce students to a range of texts from different periods, styles and genres

• develop in students the ability to engage in close, detailed analysis of individual texts and make relevant connections

• develop the students' powers of expression, both in oral and written communication

• encourage students to recognize the importance of the contexts in which texts are written and received

• encourage an appreciation of the different perspectives of other cultures, and how these perspectives construct meaning

• encourage students to appreciate the formal, stylistic and aesthetic qualities of texts

The course is organised into four units, each focused on a unique line of inquiry.

Students are assessed through a combination of formal examinations, written coursework and oral activities.

Units

Year	Unit	Inquiry Focus
1	Unit 1 – Shaping the Individual	How does the world around us shape who we become?
	Unit 2 – The Fantasy of Family	What ideals and attitudes are embedded in representations of family?
	Unit 3 – Cultural Connections	How are cultural expectations reflected and constructed in literary and non-literary works?
2	Unit 4 – Unchanging Human Nature	How have authors across time and place explored 'unchanging universal' themes?

Assessment

Summative Type
Individual Oral Commentary
Written Assignment (HL only)
Paper 1 and 2 (EA)

Topic and assessment from the 2021 subject guide.

LANGUAGE B: ENGLISH & CHINESE

Course Overview

Language B Standard Level (SL) and Higher Level (HL) are language acquisition courses for students with some previous experience of learning the language. While studying the language, students also explore the culture(s) connected with it.

The course is organised into five prescribed themes to provide relevant contexts for study and opportunities for students to communicate about matters of personal, local or national and global interest.

The five prescribed themes are: identities, experiences, human ingenuity, social organisation and sharing the planet.

In addition, students at HL will study two works of literature selected by the teacher.

Intercultural understanding and plurilingualism are key goals of the course as students are exposed to a variety of authentic texts and they produce work in a variety of communicative contexts.

Internal assessment at both SL and HL tests students' abilities in listening and speaking in a genuine conversation format (integrating receptive, productive and interactive skills). IA consists of an individual oral based on the options (presentation and discussion with the teacher).

Literature List (English HL)

The Giver by Lois Lowry
Boy Overboard (the play by Morris Gleitzman)
Animal Farm by George Orwell

Topics

Year	Themes	Topics
Topics covered across the two year course	Identities	Citizens of the world Belief and identity Lifestyles Beauty and health
	Experiences	Pilgrimage Migration Refugees Holiday and travel
	Human Ingenuity	Future humans Technology and human interaction Human genetic engineering Artistic expression and entertainment
	Social Organisation	Minorities & education Partners for life The future of jobs Social engagement
	Sharing the Planet	Ending poverty Climate change Power to the people Urban and rural environments

Assessment

Summative Type
Individual Oral
Paper 1 and 2 (EA) – Writing, Reading and Listening exams

LANGUAGE AB INITIO: SPANISH & CHINESE

Course Overview

The language ab initio course is a language acquisition course for students with little or no experience of the language. The course is designed to provide students with the necessary skills and intercultural understanding to enable them to communicate successfully in an environment where the language studied is spoken.

Offered at SL only, language ab initio is a language acquisition course designed for students with no previous experience in—or very little exposure to—the target language.

Language ab initio students develop their receptive, productive and interactive skills while learning to communicate in the target language in familiar and unfamiliar contexts.

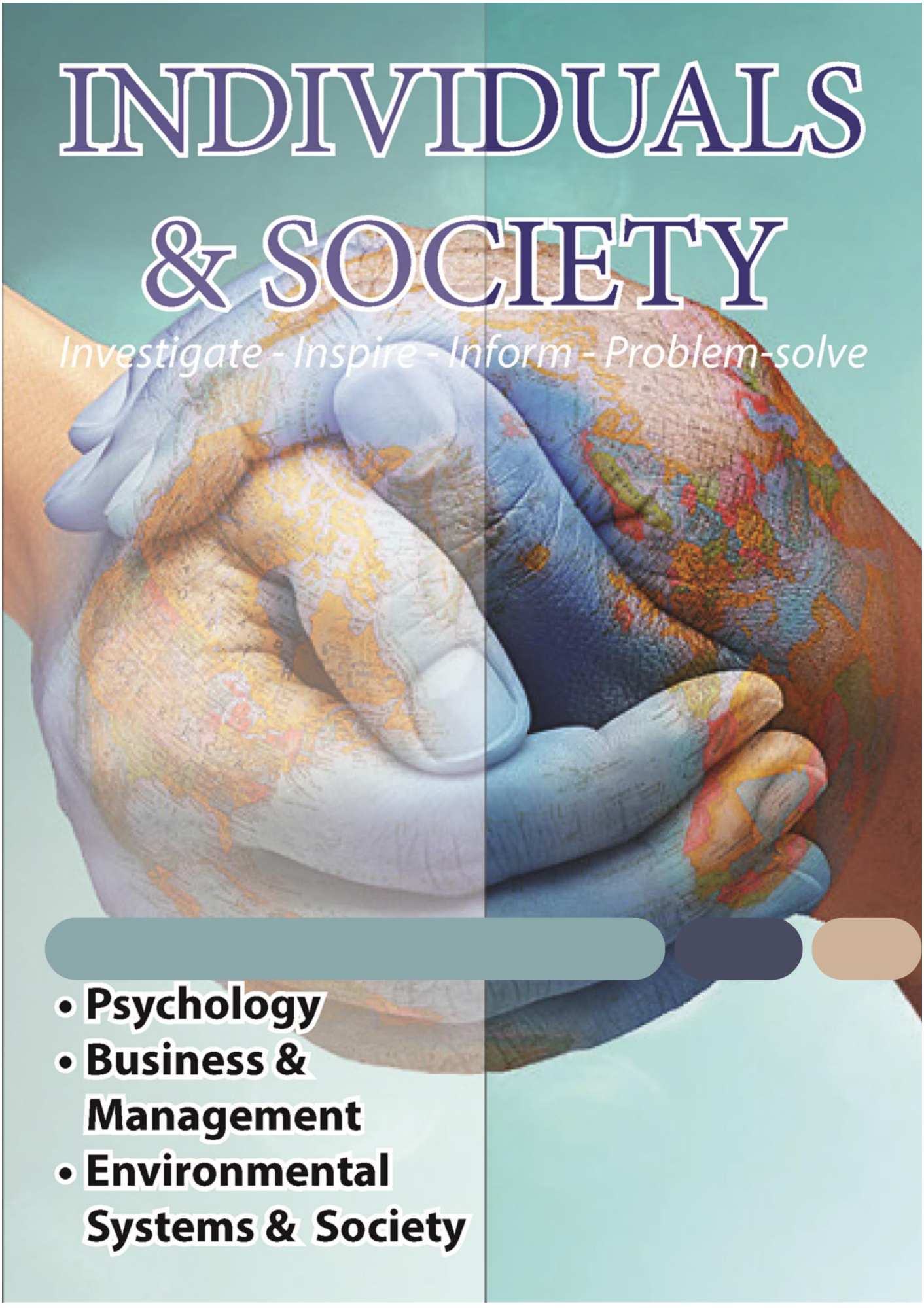
Students develop the ability to communicate through the study of language, themes and texts. There are five prescribed themes: identities, experiences, human ingenuity, social organization and sharing the planet.

Topics

Year	Theme	Topic
1	Identities	Personal attributes Personal relationships Eating and drinking Physical wellbeing
	Experiences	Daily routine Leisure Holidays Festivals and celebrations
	Human ingenuity	Transport Entertainment Media Technology
2	Social Organisation	Neighbourhood Education The workplace Social issues
	Sharing the Planet	Climate Physical geography The environment Global issues

Assessment

Summative Type	
Individual Oral (Internal assessment)	25%
Paper 1 Writing (External assessment)	25%
Paper 2 Listening (External assessment)	25%
Paper 2 Reading (External assessment)	25%


INDIVIDUALS
& SOCIETY
Investigate - Inspire - Inform - Problem-solve
• Psychology
• Business & Management
• Environmental Systems & Society

PSYCHOLOGY

Course Overview

The IB Diploma Programme psychology course is the systematic study of behaviour and mental processes.

Since the psychology course examines the interaction of biological, cognitive and sociocultural influences on human behaviour, it is well placed in Group 3, Individuals and Societies. Students undertaking the course can expect to develop an understanding of how psychological knowledge is generated, developed and applied. This will allow them to have a greater understanding of themselves and appreciate the diversity of human behaviour.

The holistic approach reflected in the curriculum, which sees biological, cognitive and sociocultural analysis being taught in an integrated way ensures that students are able to develop an understanding of what all humans share, as well as the immense diversity of influences on human behaviour and mental processes.

Topics

Year	Unit	Topic
1	Research Methods in Psychology	Quantitative and Qualitative methods to study human behaviour
	Core	The biological level of analysis The cognitive level of analysis
	Internal Assessment	Simple Experimental Study
2	Core	The sociocultural level of analysis
	Options (1 only for SL)	Human Relationships Developmental Psychology

Assessment

Summative Type
Experimental Study Report (IA)
Paper 1 and 2 (EA)
Paper 3 HL only

BUSINESS MANAGEMENT

Course Overview

The business management course is designed to develop students' knowledge and understanding of business management theories, as well as their ability to apply a range of tools and techniques.

Students learn to analyse, discuss and evaluate business activities at local, national and international levels. The course covers a range of organisations from all sectors, as well as the socio-cultural and economic contexts in which those organizations operate.

The course covers the key characteristics of business organisation and environment and the business functions of human resource management, finance and accounts, marketing and operations management. Links between the topics are central to the course. Through the exploration of six underpinning concepts (change, culture, ethics, globalisation, innovation and strategy), the course allows students to develop a holistic understanding of today's complex and dynamic business environment. The conceptual learning is firmly anchored in business management theories, tools and techniques and placed in the context of real world examples and case studies.

The course encourages the appreciation of ethical concerns at both a local and global level. It aims to develop relevant and transferable skills, including the ability to: think critically; make ethically sound and well-informed decisions; appreciate the pace, nature and significance of change; think strategically; and undertake long term planning, analysis and evaluation. The course also develops subject-specific skills, such as financial analysis.

Topics

Year	Unit	Topic
1	Business Organisation and Environment	What is business? Types of business entities Business objectives Stakeholders Growth and evolution Multinational Companies
	Human Resource Management	Introduction to human resource management Organisational structure Leadership and management Motivation and demotivation Organisational (corporate) culture (HL only) Communication Industrial/employee relations (HL only)
	Finance and Accounts	Introduction to finance Sources of finance Costs and revenues Final accounts Profitability and liquidity ratio analysis Debt /Equity ratio analysis (HL only) Cash flow Investment appraisal Budgets (HL only)
2	Marketing	The role of marketing Marketing planning (including introduction to the four Ps) Sales forecasting (HL only) Market research The 7Ps (product, price, promotion, place, people, processes, physical evidence) International marketing (HL only)
	Operations and Management	The role of operations management Operations methods Lean production and quality management (HL only) Location Break Even Analysis Production planning (HL only) Crisis management and contingency planning (HL only) Research and development (HL only) Management Information Systems (HL only)

Assessment

Summative Type
Business Research Project (IA)
Paper 1 and 2 (EA)
Paper 3 (HL only)

ENVIRONMENTAL SYSTEMS AND SOCIETY

Course Overview

Through studying environmental systems and societies (ESS), students will be provided 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 pressing environmental issues that they will inevitably come to face. This subject allows students to evaluate the scientific, ethical and socio-political aspects of issues.

ESS is one of two interdisciplinary courses offered in the Diploma Programme. Because it 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. Students will be able to study this course successfully with no specific previous knowledge of science or geography.

During the course, students will study eight different topics. An important aspect of the ESS course is hands-on work in the laboratory and/or out in the field.

Only Available as SL.

HL course starting January 2025

Topics

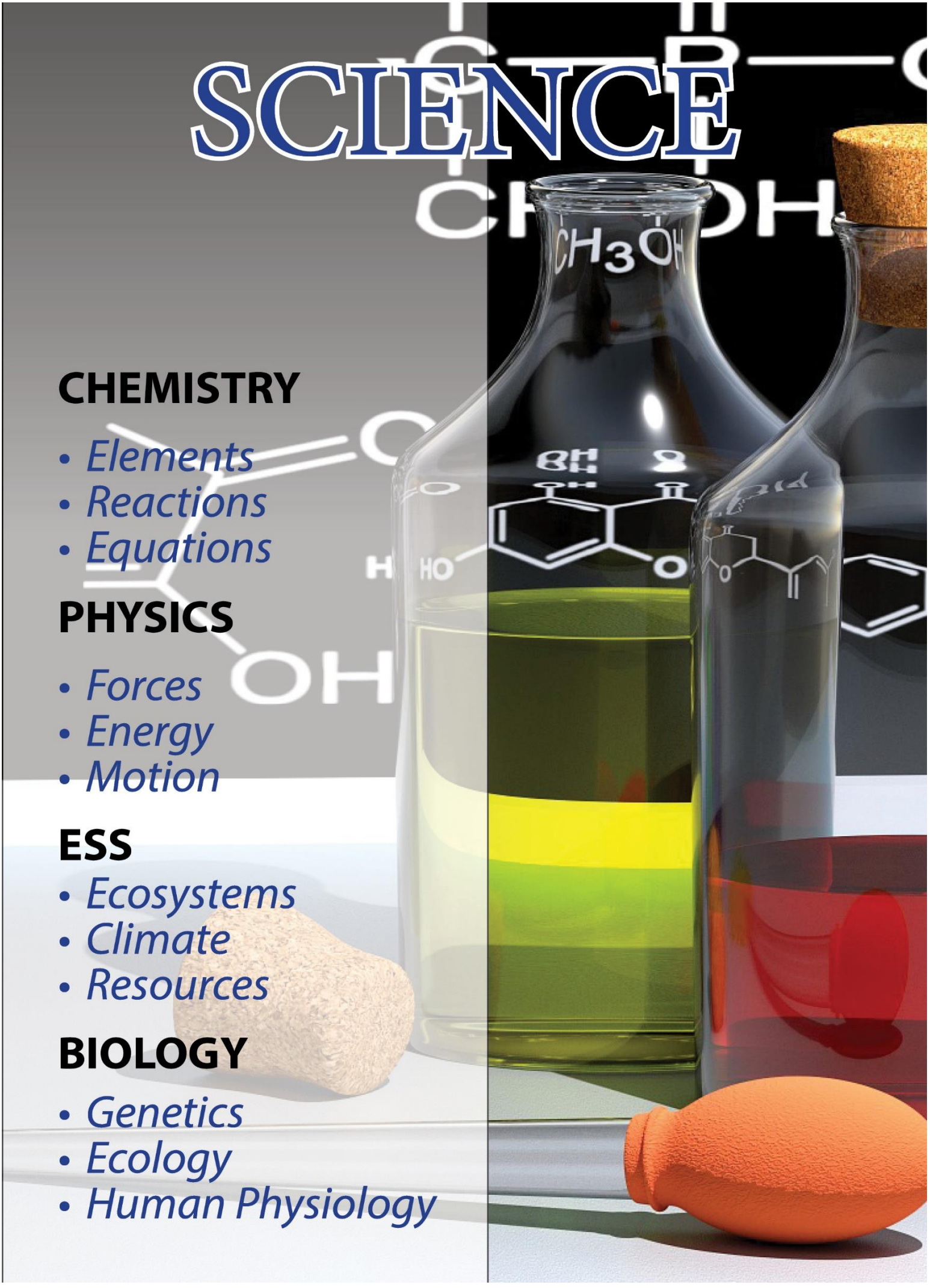
Year	Unit	Topic
1	Foundations of Environmental Systems and Societies	Environmental Values Systems Systems and Models Energy and Equilibria Sustainability Humans and Pollution
	Ecosystems and Ecology	Species and Populations Communities and Ecosystems Flows of Energy and Matter Biomes, Zonation and Succession Investigating Ecosystems*
	Biodiversity and Conservation	Introduction to Biodiversity Origins of Biodiversity Threats to Biodiversity Conservation of Biodiversity
	Human Systems and Resource Use	Human Population Dynamics Resource Use in Society Solid Domestic Waste Human Population and Carrying Capacity
2	Water and Aquatic Food Production Systems	Introduction to Water Systems Access to Fresh Water Aquatic Food Production Systems Water Pollution
	Soil Systems and Terrestrial Food Production Systems	Introduction to Soil Systems Terrestrial Food Production Soil Degradation and Conservation
	Atmospheric Systems and Societies	Introduction to the Atmosphere Stratospheric Ozone Photochemical Smog Acid Deposition
	Climate Change and Energy Production	Energy Choices and Security Climate Change – causes and impacts Mitigation and Adaptation

*During this Topic, students will participate in a camp to Stradbroke Island, that will have connections to TOK and other subjects.

Assessment

Summative Type
Lab Practicals and Individual Investigation Report
Paper 1 and 2 (EA)

SCIENCE



CHEMISTRY

- *Elements*
- *Reactions*
- *Equations*

PHYSICS

- *Forces*
- *Energy*
- *Motion*

ESS

- *Ecosystems*
- *Climate*
- *Resources*

BIOLOGY

- *Genetics*
- *Ecology*
- *Human Physiology*

CHEMISTRY

Course Overview

Chemistry is an experimental science that combines academic study with the acquisition of practical and investigational skills.

It is often called the central science as chemical principles underpin both the physical environment in which we live and all biological systems. Apart from being a subject worthy of study in its own right, chemistry is often a prerequisite for many other courses in higher education, such as medicine, biological science and environmental science.

Through studying a science subject 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, the emphasis on a practical approach. In addition, through the overarching theme of the "Nature of Science" this knowledge and skills will be put into the context of way science and scientists work in the 21st Century and the ethical debates and limitations of creative scientific endeavour.

The sciences are taught practically. Students have opportunities to design investigations, collect data, develop manipulative skills, analyse results, collaborate with peers and evaluate and communicate their findings. The investigations may be laboratory based or they may make use of simulations and data bases.

A practical approach to the course delivery is emphasised through the interdisciplinary group 4 project (end of Year 11) and a mixture of both short-term and long-term experiments and investigations.

See Full List of Science Labs in Appendix

Course for students (First assessment in May 2025).

Chemistry roadmap via structure and reactivity

Skills in the study of chemistry			
Structure Structure refers to the nature of matter from simple to more complex forms		Reactivity Reactivity refers to how and why chemical reactions occur	
Structure determines reactivity, which in turn transforms structure			
Structure 1. Models of the particulate nature of matter	Structure 1.1—Introduction to the particulate nature of matter	**Reactivity 1. What drives chemical reactions?**	Reactivity 1.1—Measuring enthalpy changes
	Structure 1.2—The nuclear atom		Reactivity 1.2—Energy cycles in reactions
	Structure 1.3—Electron configurations		
	Structure 1.4—Counting particles by mass: The mole		Reactivity 1.3—Energy from fuels
	Structure 1.5—Ideal gases		Reactivity 1.4—Entropy and spontaneity (Additional higher level)
Structure 2. Models of bonding and structure	Structure 2.1—The ionic model	**Reactivity 2. How much, how fast and how far?**	Reactivity 2.1—How much? The amount of chemical change
	Structure 2.2—The covalent model		Reactivity 2.2—How fast? The rate of chemical change
	Structure 2.3—The metallic model		Reactivity 2.3—How far? The extent of chemical change
	Structure 2.4—From models to materials		
Structure 3. Classification of matter	Structure 3.1—The periodic table: Classification of elements	**Reactivity 3. What are the mechanisms of chemical change?**	Reactivity 3.1—Proton transfer reactions
	Structure 3.2—Functional groups: Classification of organic compounds		Reactivity 3.2—Electron transfer reactions
			Reactivity 3.3—Electron sharing reactions
			Reactivity 3.4—Electron-pair sharing reactions

SL – Assessment

Assessment component	Weighting
External assessment (3 hours)	**80%**
Paper 1 (1 hour and 30 minutes) Paper 1A—Multiple-choice questions Paper 1B—Data-based questions (Total 55 marks)	**36%**
Paper 2 (1 hour and 30 minutes) Short-answer and extended-response questions (Total 50 marks)	**44%**
Internal assessment (10 hours)	**20%**
The internal assessment consists of one task: the scientific investigation. This component is internally assessed by the teacher and externally moderated by the IB at the end of the course. (Total 24 marks)	

HL - Assessment

Assessment component	Weighting
External assessment (4 hours and 30 minutes)	**80%**
Paper 1 (2 hours) Paper 1A—Multiple-choice questions Paper 1B—Data-based questions (Total 75 marks)	**36%**
Paper 2 (2 hours and 30 minutes) Short-answer and extended-response questions (Total 90 marks)	**44%**
Internal assessment (10 hours)	**20%**
The internal assessment consists of one task: the scientific investigation. This component is internally assessed by the teacher and externally moderated by the IB at the end of the course. (Total 24 marks)	

Topics Course for the students

Year	Unit	Topic
1	Stoichiometric Relationship	Introduction to the particulate nature of matter and chemical change The mole concepts Reacting masses and volumes
	Atomic Structure	The nuclear atom Electron configuration Electrons in atoms (HL)
	Periodicity	The Periodic Table Physical properties The transition metals (HL)
	Bonding and Structure	Ionic bonding and structure Covalent bonding Covalent structures Intermolecular forces Metallic bonding Chemical bonding and structure (HL)
	Energetics / Thermochemistry	Measuring energy changes Hess's Law Bond enthalpies Energetics / Thermochemistry (HL
2	Chemical Kinetics	Chemical kinetics
	Equilibrium	Equilibrium
	Acids and Bases	Theories of acids and basis The pH scale
	Redox Process	Oxidation and reduction Voltaic cells
	Organic Chemistry	Fundamentals
	Measurement and Data Processing	Uncertainties and errors Measurement and analysis (HL)

Assessment

New Guide is published for First assessment 2025

Summative Type
Individual Investigation and Report (Internal) 20%
Paper 1, 2 and 3 (External) 80%

The required practicals make up part of the 20 hours (SL) or 40 hours (HL) that is a requirement of the course. Other experiments will take place in class, with 10 hours of practical time used on the Individual Investigation, and a further 10 hours is spent on the interdisciplinary Group 4 Project at the end of Year 11.

PHYSICS

Course Overview

Physics is the most fundamental of the experimental sciences, as it seeks to explain the universe itself from the very smallest particles to the vast distances between galaxies.

Despite the exciting and extraordinary development of ideas throughout the history of physics, observations remain essential to the very core of the subject. Models are developed to try to understand observations, and these themselves can become theories that attempt to explain the observations.

Through studying a science subject 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, the emphasis is on a practical approach. In addition, through the overarching theme of the "Nature of Science" this knowledge and skills will be put into the context of the way science and scientists work in the 21st Century and the ethical debates and limitations of creative scientific endeavour.

The sciences are taught practically. Students have opportunities to design investigations, collect data, develop manipulative skills, analyse results, collaborate with peers and evaluate and communicate their findings. The investigations may be laboratory based or they may make use of simulations and databases

Although there are no mandatory experiments, the course does have a minimum of 20 hours (SL) or 40 hours (HL) of practical work. This is in addition to the collaborative sciences project (previously known as the Group 4 Project) and Scientific Investigation.

Topics

Year	Unit	Topic
Topics studied over two-year course	Space, time and motion	A.1 Kinematics * A.2 Forces and momentum * A.3 Work, energy & power * A.4 Rigid body mechanics *** A.5 Galilean and special relativity ***
	The particulate nature of matter	B.1 Thermal energy transfers * B.2 Greenhouse effect * B.3 Gas laws * B.4 Thermodynamics *** B.5 Current and circuits *
	Wave behaviour	C.1 Simple harmonic motion ** C.2 Wave model * C.3 Wave phenomena ** C.4 Standing waves and resonance * C.5 Doppler effect **
	Fields	D.1 Gravitational fields ** D.2 Electric and magnetic fields ** D.3 Motion in electromagnetic fields * D.4 Induction ***
	Nuclear and quantum physics	E.1 Structure of the atom ** E.2 Quantum physics *** E.3 Radioactive decay ** E.4 Fission * E.5 Fusion and stars *

* Topics taught to all students

** Topics taught to all students, with additional HL content

*** Topics taught to HL students only

Assessment

Type		Weighting
Internal Assessment	Scientific Investigation	20%
External Assessment	Paper 1	36%
	Paper 2	44%

BIOLOGY

Course Overview

Biology is the study of life. The vast diversity of species makes biology both an endless source of fascination and a considerable challenge. Biologists attempt to understand the living world at all levels from the micro to the macro using many different approaches and techniques. Biology is still a young science and great progress is expected in the 21st century. This progress is important at a time of growing pressure on the human population and the environment.

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

The sciences are taught practically. Students have opportunities to design investigations, collect data, develop manipulative skills, analyse results, collaborate with peers and evaluate and communicate their findings. The investigations may be laboratory based or they may make use of simulations and databases.

A practical approach to the course delivery is emphasised through the interdisciplinary group 4 project (end of Year 11) and a mixture of both short-term and long-term experiments and investigations.

See Full List of Science Labs in Appendix

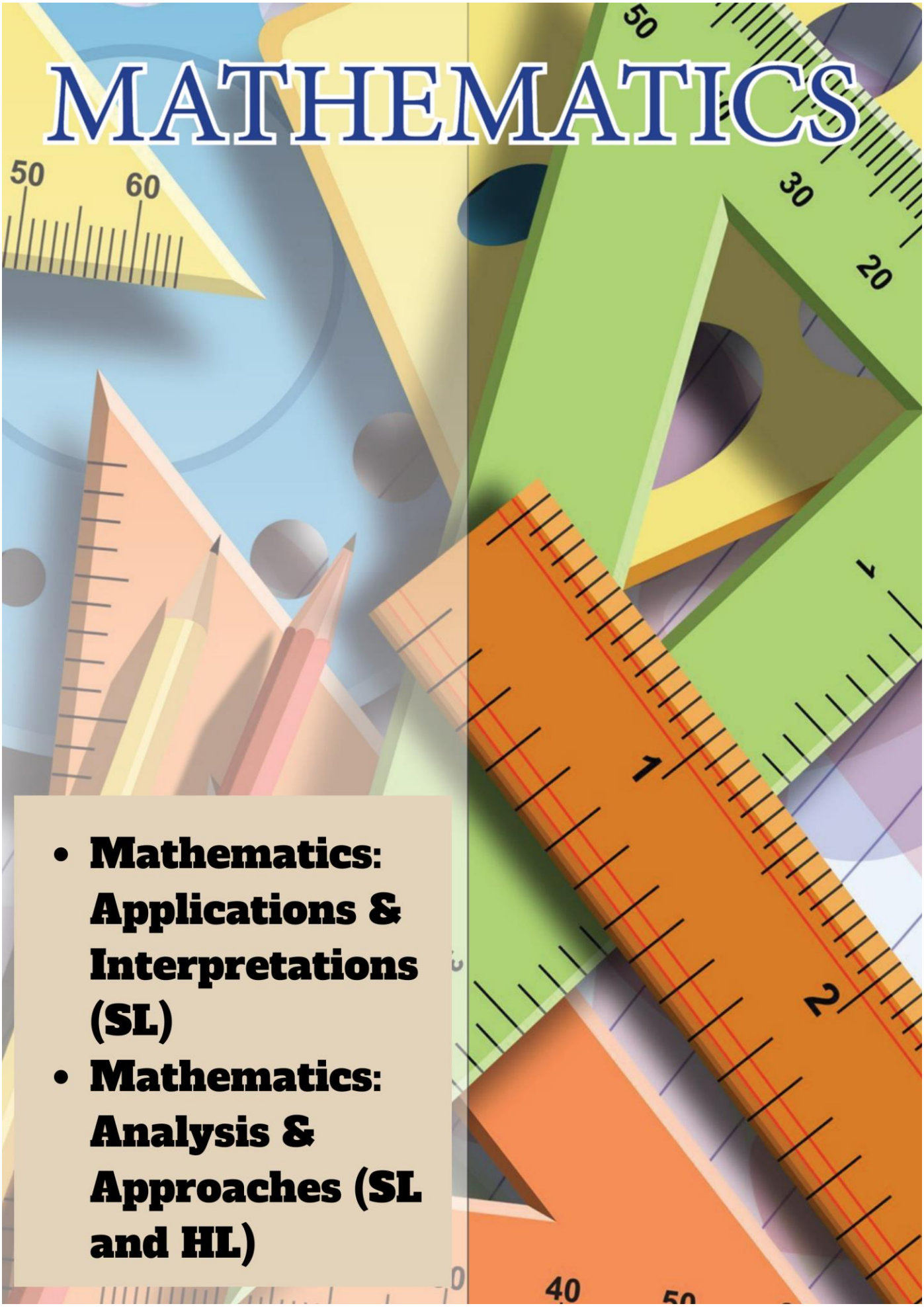
Topics

Year	Topic
Topics covered across two year course	Cell biology
	Molecular biology
	Genetics
	Ecology
	Evolution and biodiversity
	Human physiology
HL only	Nucleic acids
	Metabolism, cell respiration and photosynthesis
	Plant biology
	Genetics and evolution
	Animal physiology

Assessment

Summative Type
Individual Investigation and Report
Paper 1, 2 and 3 (EA)

All Topics and Assessment from Biology syllabus – first assessment 2025.


MATHEMATICS
Mathematics: Applications & Interpretations (SL)
Mathematics: Analysis & Approaches (SL and HL)

MATHEMATICS: APPLICATIONS AND MATHEMATICS: ANALYSIS AND APPROACHES (SL & HL)

Course Overview

All DP mathematics courses serve to accommodate the range of needs, interests and abilities of students, and to fulfil the requirements of various university and career aspirations.

The IB DP Mathematics: analysis and approaches course recognizes the need for analytical expertise in a world where innovation is increasingly dependent on a deep understanding of mathematics.

The focus is on developing important mathematical concepts in a comprehensible, coherent and rigorous way, achieved by a carefully balanced approach. Students are encouraged to apply their mathematical knowledge to solve abstract problems as well as those set in a variety of meaningful contexts. Mathematics: analysis and approaches has a strong emphasis on the ability to construct, communicate and justify correct mathematical arguments.

Students should expect to develop insight into mathematical form and structure, and should be intellectually equipped to appreciate the links between concepts in different topic areas. Students are also encouraged to develop the skills needed to continue their mathematical growth in other learning environments.

This Mathematics course is intended for students who wish to pursue studies in mathematics at university or subjects that have a large mathematical content; it is for students who enjoy developing mathematical arguments, problem solving and exploring real and abstract applications, with and without technology.

The HL course investigates all topics to a higher degree and includes complex numbers and further calculus. It is only suggested that students with an extremely high degree of success in mathematics

All topics and assessment from the Mathematics: analysis and approaches syllabus – first assessment 2021.

Topics

Year	Topic
Topics covered across two-year course	1. Number and algebra
	2. Functions
	3. Geometry and trigonometry
	4. Statistics and probability
	5. Calculus

Assessment

Summative
Internal Assessment: Mathematic Exploration
External Assessment: SL: Paper 1 & 2 HL: Paper 1, 2 & 3

Paper 1 of the External Assessment is without the use of a calculator – students must develop skills to be successful.

Paper 2 (and 3 – HL only) of the External Assessment requires the use of a graphical display calculator (GDC). Students will practice the skills required in class time.

The internal assessment is a mathematical exploration of a topic of student's choice.

MATHEMATICS: APPLICATIONS AND INTERPRETATIONS (SL only)

Course Overview

All DP mathematics courses serve to accommodate the range of needs, interests and abilities of students, and to fulfil the requirements of various university and career aspirations.

The IB DP Mathematics: applications and interpretation course recognizes the increasing role that mathematics and technology play in a diverse range of fields in a data-rich world. As such, it emphasizes the meaning of mathematics in context by focusing on topics that are often used as applications or in mathematical modelling.

To give this understanding a firm base, this course includes topics that are traditionally part of a pre-university mathematics course such as calculus and statistics. Students are encouraged to solve real-world problems, construct and communicate this mathematically and interpret the conclusions or generalizations.

Students should expect to develop strong technology skills, and will be intellectually equipped to appreciate the links between the theoretical and the practical concepts in mathematics.

Throughout the course students are encouraged to take a considered approach to various mathematical activities and to explore different mathematical ideas.

This course is designed for students who enjoy describing the real world and solving practical problems using mathematics, those who are interested in harnessing the power of technology alongside exploring mathematical models and enjoy the more practical side of mathematics.

Topics

Year	Topic
Topics covered across two-year course	1. Number and algebra
	2. Functions
	3. Geometry and trigonometry
	4. Statistics and probability
	5. Calculus

Summative
Internal Assessment: Mathematic Exploration
External Assessment: SL: Paper 1 & 2

Assessment

All external assessments involve the use of technology. Students are also encouraged to develop the skills needed to continue their mathematical growth in other learning environments.

The internally assessed exploration allows students to develop independence in mathematical learning.


The ARTS
• Music
• Visual Art

VISUAL ART

Course Overview

The visual arts are an integral part of everyday life, permeating all levels of human creativity, expression, communication and understanding.

They range from traditional forms embedded in local and wider communities, societies and cultures, to the varied and divergent practices associated with new, emerging and contemporary forms of visual language. They may have socio-political impact as well as ritual, spiritual, decorative and functional value; they can be persuasive and subversive in some instances, enlightening and uplifting in others.

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

The course is designed for students who want to go on to study visual arts in higher education as well as for those who are seeking lifelong enrichment through visual arts.

Topics

Year	Unit	Topic
1	Art as Lens (Representation and the process of abstraction)	*Concept: lenses to explore the material world* *Contexts: personal and contemporary* *Focus: People, place, objects* *Media: Primarily 2D*
	Art as code (Symbolism and the delivery of messages)	*Concept: art as a coded visual language* *Contexts: formal and cultural* *Focus: Codes, symbols, signs and art conventions* *Media: 2D, 3D, and time-based*
2	Art as knowledge (Audience participation in construction of meaning)	*Concept: constructing knowledge as artist and audience* *Contexts: contemporary, personal, cultural and/or formal* *Focus: student-directed* *Media: student-directed*
	Art as alternate (refining, resolving and exhibiting)	*Concept: evolving alternate representations and meaning* *Contexts: contemporary and personal, cultural and/or formal* *Media: student- directed* *Resolving work and preparing for individual exhibition*

Assessment

Summative Type
Exhibition
Comparative Study
Process Folio

MUSIC

Course Overview

The Music course enables students to further their skills in performance, composition and research.

The music course identifies three integrated musical processes—**exploring**, **experimenting** and **presenting**—through which students engage in relevant practical activities.

Through engagement with these processes, students develop their understanding of how musicians work, and deepen their knowledge and understanding of diverse musical material from **personal**, **local** and **global contexts**.

In the role of **researcher**, students learn to investigate music in authentic ways, including aural, kinaesthetic and scholarly research. Students present their findings in musical ways and explain their understanding using accurate terminology.

In the role of **creator**, students make music by composing, improvising and arranging. Students learn about different ways of turning musical thoughts and ideas into musical pieces. Students learn to present their created work through recorded performances, digitally created tracks and appropriate forms of notation.

In the role of **performer**, students develop their skills in practical music-making and delivery, including interpretation, expression and technical proficiency. Students present their work, and the work of others, through recordings and videos of live performances.

Music at Higher Level: "The contemporary music maker" component culminates in a collaborative project that is inspired by real-life practices in contemporary music-making. The project brings together the roles and skills of researcher, creator and performer, as well as the processes of exploration, experimentation and presentation, through a real-life music-making situation within a contemporary setting. Developing, realising and sharing artistic intentions through practical music-making is at the heart of this project.

Topics

Year	Area of Inquiry	Focus
1	**Music for sociocultural and political expression**	This area focuses on music that expresses and communicates social and cultural messages, conveys political ideas and/or helps preserve social and cultural traditions.
	Music for listening and performance	This area focuses on music that expresses and communicates intrinsic aesthetic values.
	Music for dramatic impact, movement and entertainment	This area focuses on music used for dramatic effect, music that supports choreographed movement or dance and/or music that is incidental or intended to purposefully serve as entertainment
2	**Music technology in the electronic and digital age**	This area focuses on music created, performed and/or produced using electronic or digital technologies. Such technologies are an important aspect of contemporary musical experiences, often transforming some of the ways that we understand and engage with music.

Assessment

Summative Type
Portfolio of works collected across course: • Researching: reports, performance notes • Creating: composition exercises • Performing: own works and chosen works

Recommendation

This course is best suited to students who are receiving regular lessons in their instrument or voice, and who have a knowledge of basic music theory.

THEORY OF KNOWLEDGE (TOK)

TOK Course Overview

Theory of Knowledge (TOK) provides an opportunity for students to think deeply about knowledge and what it means to 'know'. It is one of the components of the IBDP core and is mandatory for all students.

Students explore the notion of knowledge through the following concepts: evidence, certainty, truth, interpretation, power, justification, explanation, objectivity, perspective, culture, values, and responsibility. Conduct thoughtful inquiries of these concepts through Themes and Areas of Knowledge. This allows students to view the subjects they study through a critical lens, bringing depth and breadth to their IBDP course as a whole, connecting and applying it to real world situations. TOK aims to make students aware of the interpretative nature of knowledge, including biases and assumptions which may inform our perspective, as well as appreciating the richness of cultural diversity.

Year	Unit	Topics
DPl	Theme: Knowledge and the Knower	My Knower Profile The Knowledge Framework Assumptions, biases and perspectives
	Area of Knowledge: Natural Sciences	Methodology of establishing scientific knowledge Reliability and certainty Theories and paradigms
	Theme: Knowledge and Politics	Language and objectivity Dissemination of knowledge and the role of context Ethical responsibilities and obligations
	Topic chosen from: • **Knowledge and technology** • **Knowledge and language** • **Knowledge and religion** • **Knowledge and indigenous societies**	Collaborative inquiry into theme of choice Presentation
	Area of Knowledge: Maths	Certainty and axioms The beauty of maths Historical development of knowledge
	Area of Knowledge: Human Sciences	Methodology of creating knowledge in human sciences - the observer effect Assumptions, biases and perspectives Evidence
	Area of Knowledge: Arts	Justification and value of knowledge Ethical obligations and responsibilities Culture and objectivity
	Exhibition	Internal Assessment (33% of final grade)

Course Structure & Assessment

Students are assessed with an A-E. TOK contributes towards the bonus points in collaboration with the Extended Essay. Formative assessments include reflection journals and a collaborative presentation.

The Summative assessment mark is made up of:

1. An Exhibition: this is done independently, where you present three artefacts on one of 36 possible prompts. It is completed in Term 4 of DPl and accounts for 33% of your final grade.
2. A 1600-word essay: this is done independently. Students choose from six essay prompts which are published by 1B in March of DP2. You submit end of July of DP2. This means that TOK is finished by end of July, providing time for completion of CAS or independent study.

Year	Unit	Topics
DP2	Area of Knowledge: History	Revisionism and perspectives Evidence and theories Historical development of knowledge
	TOK Essay	Exploring essay criteria Unpacking essay prompts Action planning and research Write and submit final essay (66% of final grade)

APPENDICES

Science Labs

IB Physics - List of Required Practicals

	SL	HL
Experimental programme	40	60
Practical work	20	40
Collaborative sciences project	10	10
Scientific investigation	10	10

IB Chemistry - List of Required Practicals

The required practicals make up part of the 20 hours (SL) or 40 hours (HL) that is a requirement of the course. Other experiments will take place in class, with 10 hours of practical time used on the Individual Investigation, and a further 10 hours is spent on the interdisciplinary Group 4 Project at the end of Year 11.

CALAMVALE

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