



**SINGAPORE
INTERNATIONAL
SCHOOL**
Since 1986



CAMBRIDGE
International Examinations

Cambridge International School

A LEVEL INFORMATION BOOKLET 2016



SINGAPORE INTERNATIONAL SCHOOL

CAMBRIDGE AS & A LEVEL COURSE PROGRAMME

Why do A Levels?

In order to secure a place at university, students must follow a programme where there is heavy emphasis on advanced study to prepare them for higher education. Cambridge International AS and A Level qualifications have a proven reputation for being excellent preparation for university, employment and life.

Thousands of learners use Cambridge International AS and A Levels every year to gain places at leading universities worldwide, including the UK, US, Australia, Canada and New Zealand. They are regarded as a passport to success.

All UK universities and over 450 US universities accept Cambridge International A Level qualifications, including Harvard, MIT, Stanford and Yale. In places such as the US and Canada, good grades in carefully chosen Cambridge International A Level subjects can result in up to one year university course credit.

To find out whether the university that students wish to apply to accept CIE qualifications, students should contact the university admissions office.

It is also possible to look up specific universities on the CIE recognitions database. The database can be accessed online at www.cie.org.uk/qualifications/recognition .

Choosing the right subject combination

More than with IGCSEs, subject choice at A Level is crucial. For many university courses there are specific subjects that must be studied at A Level. It is therefore important for students to research before choosing subjects. If students are unsure of the exact course that they would like to study at university, but they know what field it is going to be in, for example Science, this should guide their choices. If students are completely unclear as to their future direction they should focus on subjects that they enjoy and can do well in.

Subjects available at Singapore International School

Mathematics
Biology
Chemistry
Physics
Economics
Business
Sociology
History
Art and Design
Literature in English

Grading System

Passing grades on the Cambridge International AS Level are A to E, with A being the highest. AS Level grades are submitted to university applications and are the basis for predicted grades which are also submitted by the school.

The Cambridge International A Level passing grades are A* to E with A* being the highest. These grades are submitted to admissions officers at the universities to which the students have applied. It is these final grades that determine whether a student is accepted or rejected by their chosen university.

Mathematics

Why Study Mathematics?

Cambridge International A & AS Level Mathematics is accepted by universities and employers as proof of mathematical knowledge and understanding. Successful candidates gain lifelong skills, including:

- a deeper understanding of mathematical principles;
- the further development of mathematical skills including the use of applications of mathematics in the context of everyday situations and in other subjects that they may be studying;
- the ability to analyse problems logically, recognizing when and how a situation may be represented mathematically;
- the use of mathematics as a means of communication;
- a solid foundation for further study.

Curriculum Contents:

Year 11 (AS Level)	Year 12 (A Level)
<p>Topics covered in AS Pure Mathematics 1 (P1) include Quadratics; Function; Coordinate Geometry; Circular measure; Trigonometry; Vectors; Series; Differentiation and Integration.</p> <p>Topics covered in AS Mechanics 1 (P4) include Velocity and Acceleration; Forces and Motion; Vertical motion; Resolving forces; Friction; Motion due to Gravity; Newton's Laws of Motion; Energy, work and power; Potential energy and Force as a Vector Quantity.</p>	<p>Topics covered in A2 Pure Mathematics 3 (P3) include Polynomials; Modulus Function; Logarithmic and exponential functions; Trigonometry; Differentiation of trigonometric functions and products; Numerical Solution of equations.</p> <p>Topics covered in A2 Probability and Statistics (P6) include Representation of data; Permutations and combinations; Probability; Discrete random variables; The Normal Distribution.</p>

How is the subject assessed?

Year 11 (AS Level)	Year 12 (A Level)
<p>AS Mathematics Students take two examination papers- Pure mathematics 1 (P1) and Mechanics 1 (M1)</p>	<p>A2 Mathematics Students take two examination papers – Pure Mathematics 2 + 3(P3) and Probability and Statistics (P6).</p>

How the subject could be used in the future (Careers)

Mathematics is a requirement for many university courses. The problem solving skills developed by studying mathematical techniques are transferable across many subject areas specifically science, business and economics.

Biology

Why Study Biology?

Biology is the scientific exploration of the vast and diverse world of living organisms. It strives to tell us about the natural world around us. Biology can tell us about the physical makeup of our bodies and those of other animals and plants. It enables us to produce cures and treatments for many diseases. The study of biology has an immediate relevance to our daily lives. Are you intrigued with the incredible variety of organisms that inhabit our planet?

Have you wondered about their origin and how they have evolved? Have you asked yourself if we can reverse the destruction of ecosystems? Do you wonder where genetic engineering will lead? Are you interested in how the human brain functions to articulate, comprehend and pursue these problems? Then biology is the subject for you. Remember: the continual pursuit of biological understanding is essential if societies are to make informed choices to safeguard the future of the human race.

Curriculum Contents:

Year 11 (AS Level)	Year 12 (A Level)
Cell structure; Cellular transport; Biological molecules; Cell division; Genetic Control; Transport; Gas Exchange; Immunity and Ecology.	Energy and Respiration; Photosynthesis; Regulation and control; Inherited change Selection and evolution; Biodiversity and conservation; Gene technology; Biotechnology; Crops and plants; Aspects of human reproduction.

How is the subject assessed?

Year 11 (AS Level)	Year 12 (A Level)
Paper 1: Multiple choice questions Paper 2: Structured questions Paper 3: Advanced practical skills	Paper 4: Structured questions Paper 5: Planning, analysis and evaluation

How the subject could be used in the future (Careers)

Knowledge of biology can lead to careers in the following areas: Research, Health care, Environmental management and conservation: Education, Biotechnology, Forensic science, Politics and policy, Business and industry, Economics, Mathematics, Science writing and communication and Art. For more details visit <http://www.aibis.org/careers/>

Chemistry

Why Study Chemistry?

Chemistry provides important understanding of our world and how it works. It is an extremely practical science that greatly impacts our daily living. Every time we light a match, boil an egg or simply breathe in and out, we perform a chemical reaction. Our bodies grow, develop and function as a result of chemical processes. Our clothes and nearly all the objects of our everyday life are manufactured by the chemical transformation of raw materials like oil or iron ore, or by the chemical treatment of natural products like wood or wool. Have you ever wondered why leaves turn colours in the fall and how a battery generates electricity?

Universities value learners who have a thorough understanding of key concepts in chemistry, an in-depth knowledge of chemistry's most important themes and strong practical skills. Cambridge International AS and A Level Chemistry helps learners develop the knowledge and skills that will prepare them for successful university study.

Our learners also develop lifelong skills of scientific enquiry, confidence in technology, and communication and teamwork skills.

Curriculum Contents:

Year 11 (AS Level)	Year 12 (A Level)
Atoms, molecules and stoichiometry; Atomic structure; Chemical bonding; States of matter; Chemical energetics; Electrochemistry; Equilibria ; Reaction kinetics; Inorganic chemistry; Organic chemistry	Chemical energetics; Electrochemistry; Equilibria; Reaction kinetics; Inorganic chemistry; Organic chemistry; Applications of chemistry

How is the subject assessed?

Year 11 (AS Level)	Year 12 (A Level)
Paper 1: Multiple choice questions	Paper 4: Structured questions
Paper 2: Structured questions	Paper 5: Planning, analysis and evaluation
Paper 3: Advanced practical skills	

How the subject could be used in the future (Careers)

Knowledge of Chemistry can lead to careers in the following fields: Education; Finance; Forensics; Health and Safety; Finance; Laboratory work; Law; Consultancy; Media; Sales and marketing.

For more details see: <http://www.rsc.org/careers/future/>

Physics

Why Study Physics?

A deeper knowledge and understanding of Physics does not only benefit future careers in Physics, engineering, computing, electronics, architecture, medicine and medical imaging, it is now widely recognized as a major benefit to any career in finance or economics where the ability to use mathematical formulae and modeling is now considered essential.

Physics is at the root of everything and it's science is crucial to understanding the world around us, imaging function inside us, and investigating the world beyond us. It is the most basic and fundamental science. Physics encompasses the study of the universe from the largest galaxies to the smallest subatomic particles. It explores questions such as: How did the universe begin? How will it end? What is a black hole? Is time travel possible?

Universities value learners who have a thorough understanding of key concepts in physics, an in-depth knowledge of the most important themes in physics and strong practical skills. Cambridge International AS and A Level Physics helps learners develop the knowledge and skills that will prepare them for successful university study.

Our learners also develop lifelong skills of scientific enquiry, confidence in technology, and communication and teamwork skills.

Curriculum Contents:

Year 11 (AS Level)	Year 12 (A Level)
Kinematics; Dynamics; Forces; Work, Energy and Power; Momentum; Matter and Materials; Electric Fields; Electricity; Waves; Radioactivity;	Circular Motion; Gravitational Fields; Oscillations; Communication Systems; Thermal Physics; Ideal Gases; Electronics; Magnetism; Further Electricity; Quantum Physics; Nuclear Physics; Medical Imaging

How the subject is assessed?

Year 11 (AS Level)	Year 12 (A Level)
Paper 1: Multiple choice questions	Paper 4: Structured questions
Paper 2: Structured questions	Paper 5: Planning, analysis and evaluation
Paper 3: Advanced practical skills	

How the subject could be used in the future (Careers)

Knowledge of Physics can lead to careers in the following fields: Astronomy;

Meteorology; Education; Research; Leisure; IT; Industry; Engineering; Finance; Marketing.

For more details see: <http://www.aps.org/careers/physicists/index.cfm>

Economics

Why Study Economics?

Through the medium of the Economics curriculum it is hoped that students will develop effective study skills, be able to exercise critical, coherent and independent thought. It is also intended that students will develop the capacity to solve problems effectively and make decisions.

Economics is a subject which encourages students to form reasoned arguments and to present them clearly. By working both independently and cooperatively students develop research skills, learn to organize their work effectively, and to use a variety of media and technologies to research and to present data.

Curriculum Contents:

Students will study different economic concepts and relate them to the real world. The course looks at government strategies to control economic variables such as inflation, interest rates and employment as well as the basic economic problem of resource allocation supply, demand, economic development and international trade.

Year 11 (AS Level)	Year 12 (A Level)
<ul style="list-style-type: none">• Basic economic ideas• The price system• Government intervention in the price system• Measurement in the Macroeconomy• International Trade• Macroeconomic problems and policies	<ul style="list-style-type: none">• Economic Efficiency• Consumer Theory• Theory of the Firm• Labour Market Economics• Microeconomic and macro Economic Problems and Policy• International Economic Problems and Policy• Development economics

How is the subject assessed?

Year 11 (AS Level)	Year 12 (A Level)
Paper 1: Multiple choice Paper 2: Data response and structured essay	Paper 3: Multiple choice Paper 4: Data response and structured essay

How the subject could be used in the future (Careers)

An AS/A Level in Economics provides a firm foundation for further study in the subject and can move towards careers in the following areas, business management; government; economic and market research; banking and finance; management consultancy; teaching and retailing.

Business Studies

Why Study Business Studies?

Business Studies enables students to understand and appreciate the nature and scope of business, and the role it plays in society. The syllabus covers economic, environmental, ethical, governmental, legal, social and technological issues, and encourages a critical understanding of organisations, the markets they serve and the process of adding value.

Curriculum Contents:

Students will study different business concepts and strategies wherever possible in relation to their own country and in an international context. The skills and theory of strategic management will be thoroughly explored as will motivational theories, economic activities and operations and project management. Financial information will be analysed and used in the decision making process. The AS course builds on the work done at IGCSE and the A Level course builds on the work done at AS Level. The curriculum is outlined below:

Course Content	Year 11 (AS Level) Core Topics	Year 12 (A Level) Extension Topics
1. Business and its environment	<ul style="list-style-type: none"> • Enterprise • Business structure • Size of business • Business objectives • Stakeholders in a business 	<ul style="list-style-type: none"> • Business structure • Size of business • External influences on business activity
2. People in organisations	<ul style="list-style-type: none"> • Management and leadership • Motivation • Human resource management 	<ul style="list-style-type: none"> • Human resource management • Organisation structure • Business communication
3. Marketing	<ul style="list-style-type: none"> • What is marketing? • Market research • The marketing mix 	<ul style="list-style-type: none"> • Marketing planning • Globalisation and international marketing
4. Operations and project management	<ul style="list-style-type: none"> • The nature of operations • Operations planning • Inventory management 	<ul style="list-style-type: none"> • Operations planning • Capacity utilization • Lean production and quality management • Project management
5. Finance and accounting	<ul style="list-style-type: none"> • The need for business finance • Sources of finance • Forecasting cash flows and managing • Working capital • Costs • Accounting fundamentals 	<ul style="list-style-type: none"> • Costs • Budgets • Contents of published accounts • Analysis of published accounts • Investment appraisal
6. Strategic management	Only covered at A Level	<ul style="list-style-type: none"> • What is strategic management? • Strategic analysis

		<ul style="list-style-type: none"> • Strategic choice • Strategic implementation
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How is the subject assessed?

Papers	Weight	
	Year 11 (AS Level)	Year 12 (A Level)
Paper 1 (Based on Core Topics) Duration: 1 hour 15 mins Section A: 4 short answer questions Section B: Essay on Core curriculum (1 from a choice of 3 questions)	20% 20%	10% 10%
Paper 2 (Based on Core Topics) Duration: 1 hour 30 mins 2 data response questions	60%	30%
Paper 3 (Based on Core + Extension topics) Duration: 3 hours Case Study: 5 questions + 1 essay (from a choice of 2)	N/A	50%

How the subject could be used in the future (Careers)

As an introduction to studying business or any related subject such as marketing, accountancy and economics at university level. As a preparation for work in any professional or commercial field ranging from hospitality management, business reporting, organizational or functional management, entrepreneurship, banking, investment and indeed, any area which requires management, planning and critical thinking.

Sociology

Why Study Sociology?

In a rapidly changing world, Cambridge International AS and A Level Sociology offers students the opportunity not only to explore the processes that are shaping current trends, but also to develop an understanding of the complexity and diversity of human societies and their continuities with the past. The study of Sociology should stimulate awareness of contemporary social, cultural and political issues, and focus attention on the importance of examining these issues in a rigorous, reasoned and analytical way.

Sociology is the study of social life, social change, and the social causes and consequences of human behavior. Sociologists investigate the structure of groups, organizations, and societies, and how people interact within these contexts. Since all human behaviour is social, the subject matter of sociology has a very wide scope.

Curriculum Contents:

Students will study different economic concepts and relate them to the real world. The course looks at government strategies to control economic variables such as inflation, interest rates and employment as well as the basic economic problem of resource allocation supply, demand, economic development and international trade.

Year 11 (AS Level)	Year 12 (A Level)
<p>The Family</p> <ul style="list-style-type: none">• The family and social change• Family roles, marriage and changing relationships• The social construction of age <p>Theory and Methods</p> <ul style="list-style-type: none">• The sociological perspective• Socialisation and the creation of social identity• Methods of research• The relationship between theory and methods	<p>Education</p> <ul style="list-style-type: none">• Education in social context• Structures and processes within schools <p>Global Development</p> <ul style="list-style-type: none">• Development and inequality• Global issues <p>Media</p> <ul style="list-style-type: none">• Ownership and control of the media• Media representation and effects <p>Religion</p> <ul style="list-style-type: none">• Religion and social change• Religious movements

How is the subject assessed?

Year 11 (AS Level)	Year 12 (A Level)
Paper 1: The Family Paper 2: Theory and Methods	Paper 3: Essay Paper

How the subject could be used in the future (Careers)

While many sociology graduates enter work in the public sector in a social or welfare role, others go into a variety of jobs throughout the public and private sector. Some employers include local and central government, industry, commerce, education authorities, further and higher education, and charitable, counselling and voluntary organisations.

History

Why Study History?

In a rapidly changing world, Advanced Level History gives students the opportunity not only of studying aspects of the past, but also of developing an understanding of the complexity of human societies and of acquiring a range of skills which are useful in everyday life. For the full Advanced Level, students study two different areas and periods of History, thus encouraging them to identify patterns in, and connections between, apparently contrasting events and developments. It includes source-based studies through which students will develop their skills of interpreting and evaluating evidence.

Both A Level and AS Level History encourage students to use independent study skills, to read widely, write fluently, and to develop the capacity to formulate and justify their own ideas about the past.

Cambridge International AS and A Level History is one of the most recognised qualifications around the world. It is accepted as proof of academic ability and of historical knowledge for entry to universities. Every year, thousands of students with Cambridge International AS and A Level History win places at good universities worldwide.

Curriculum Contents:

Year 11 (AS Level)	Year 12 (A Level)
<ul style="list-style-type: none">• Liberalism and Nationalism in Italy and Germany, 1815–1871• The Origins of the Civil War, 1846–1861• The Search for International Peace and Security, 1919–1945• Modern Europe, 1789–1917• The History of the USA, 1840–1941• International Relations, 1871–1945	<ul style="list-style-type: none">• The Causes and Impact of British Imperialism, c. 1850–1939• The Holocaust• The Origins and Development of the Cold War, 1941–1950• Europe of the Dictators, 1918–1941• The History of the USA, 1945–1990• International History, 1945–1991• African History, 1945–1991• Southeast Asian History, 1945–1990s

How is the subject assessed?

Year 11 (AS Level)	Year 12 (A Level)
Paper 1 – Document Question (source-based) Paper 2 – Outline Study Essays	Paper 3 - Interpretations question (source-based) Paper 4 - Depth study

How the subject could be used in the future (Careers)

An A Level qualification in History provides a firm foundation for further study in the subject and can move you towards careers in a wide range of areas including law, diplomacy, journalism, government; the media, management and teaching.

Art and Design

Why Study Art and Design?

At AS/A Level, Art students develop their skills further when analysing Art, using a broad range of materials, whilst focussing within a particular Art specialism—Fine Art, Illustration, Photography, Graphics, Fashion, Printing or Textiles. The Art and Design course considers expression and communication. Students learn about the ways in which art and design creates a language of its own.

Most of the work for this syllabus is practical, so that students can develop their abilities of observation and analysis of the visual world, sensitivity, skill, personal expression and imagination. They also learn how to relate their skills to an enhanced knowledge of their own cultures, past and present, as well as an appreciation of practical design problems.

Curriculum Contents:

A course of study in Art and Design should actively seek to develop the following abilities and qualities:

- The ability to perceive, understand and express concepts and feelings;
- The ability to record from direct observation and personal experience;
- The ability to communicate by using appropriate materials and techniques in a disciplined way; • experimentation, innovation and the use of intuition and imagination;
- Critical and analytical faculties; the ability to identify, research and evaluate problems in a systematic way;
- Confidence, initiative and a sense of adventure and achievement;
- The acquisition of a relevant working vocabulary;
- An awareness and appreciation of the interdependence of Art and Design and the individual within cultural contexts.

How is the subject assessed?

Year 11 (AS Level)	Year 12 (A Level)
Component 1 – Controlled Test	Component 3 – Coursework
Component 2 – Coursework	Component 4 – Personal Study

How the subject could be used in the future (Careers)

Students who study A Level art may continue in many related fields including Fine Art, Creative advisor, Architecture, Photography, Graphic Design, Illustration, Animation, Interior Design, Industrial Design, Art Education, Art Therapy, Art History, Gallery Direction, Museum Curator, Art Conservation, Product Design, Fashion Design and Printmaker.

Literature in English

Why Study Literature in English?

Successful students of English Literature develop an understanding and enjoyment of literary texts that is a pleasure for life, and in addition gain skills for life, including:

- The ability to write clearly and effectively;
- Skills in developing arguments;
- Skills in researching and managing information;
- The ability to analyse complex texts in different forms and styles.

Curriculum Contents:

Throughout all courses, students will continue to develop their core skills in all three areas of English assessment: reading, writing and speaking and listening while exploring, analysing and evaluating a wide variety of increasingly challenging texts.

Literature can be further divided into three key areas: poetry, prose and drama.

However, wider reading is essential to fully appreciate and evaluate both a writer's craft and a text's context.

How is the subject assessed?

Year 11 (AS Level)	Year 12 (A Level)
Paper 3 – Poetry and Prose Paper 4 - Drama	Paper 5 - Shakespeare and other pre-20th Century Texts Paper 6 - 1900 to the Present

How the subject could be used in the future (Careers)

English Literature allows students to benefit from a range of perspectives, strategies and key transferable skills; all of which can enhance performance and progress across the range of subjects selected. As an important subject at A Level, Literature effectively combines creativity with an appreciation of research, analysis and context. Indeed, students are actively enabled and encouraged to research and review a texts' impact and significance on history, culture and the wider world. Ultimately, Literature is the key to becoming a successful and independent lifelong learner.