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INTERNATIONAL SCHOOL

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ACS Egham International School
IB Diploma Programme Guides
Grade 11 and 12 / Age 16-18

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Welcome to the IB Diploma Programme

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Introduction

Young people should be equipped with the skills to prepare them for modern life, both at university and in the workplace. These skills will enable them to compete in the global market, think for themselves, work in a team or independently, not be afraid to take risks, be good communicators and be interested and interesting citizens.

Studying for the IB Diploma requires and rewards consistent application to the academic work involved. It also requires the ability to work in collaboration with teachers and fellow pupils throughout the learning process and demands personal reflection, allowing pupils to develop an awareness of the international community of thinkers and learners.

The IB Mission Statement

The International Baccalaureate aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect. To this end the organisation works with schools, governments and international organisations to develop challenging programmes of international education and rigorous assessment. These programmes encourage pupils across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.

Why chose the International Baccalaureate (IB)?

The IB programmes aim to do more by developing inquiring, knowledgeable and caring young people who are motivated to succeed. Educating students who will build a better world through intercultural understanding and respect, encouraging students of all ages to think critically and challenge assumptions. Developed independently of government and national systems, the IB incorporates quality practice from research and their global community of schools.

A Continuum of International Education

The IB provides a continuum of education, consisting of four programmes that are united by the IB's philosophy and approaches to teaching and learning. In order to teach the IB programmes, schools must be authorised and are known as IB World Schools. The four programmes are:

- Primary Years Programme (PYP) - Age 3 to 11
- Middle Years Programme (MYP) - age 11-16
- Diploma Programme (IB DP) - age 16-18
- Career-related Programme (IB CP) - age 16-18

These programmes encourage both personal and academic achievement, challenging students to excel in their studies and in their personal development. Students are able to take responsibility for their own learning and understand how knowledge itself is constructed by asking challenging questions, thinking critically and developing research skills proven to help them in higher education. IB programmes also encourage students to be active in their communities and to take their learning beyond academic study.

IB course structure

Central Components

These elements offer a fascinating breadth of study and no small challenge - one of the reasons universities place a high value on the IB is due to the ability of IB pupils to adjust swiftly to higher education. In all, six subjects will be studied. One must be selected from each of Groups 1 - 5, and one further subject from either Group 2, 3, 4 or 6 (see diagram). Over the two year duration of the course, three subjects are studied in depth at Higher Level (HL), while the remaining three subjects are studied at Standard Level (SL). In addition to these six main subjects, TOK is also a taught course.

Welcome to the IB Diploma Programme

Theory of Knowledge (ToK)

Theory of Knowledge challenges pupils to reflect critically on diverse ways of knowing, to question the bases of knowledge, to be aware of subjective and ideological biases and to analyse evidence expressed in rational argument. ToK is central to the educational philosophy of the IB programme, intended to stimulate critical reflection on the knowledge and experience gained within and beyond the classroom.

Creativity, Action and Service (CAS)

CAS is one of the core elements of the Diploma and requires involvement in a range of activities alongside academic study. CAS has three strands:

1. Creativity: Arts and other activities that involve creative thinking, whether music, drama or something more esoteric
2. Action: Physical activity contributing to a healthy lifestyle - on the games field, in the dance studio, or the sports centre
3. Service: In unpaid, voluntary exchange with members of the immediate or wider community that has a learning benefit for the pupil and brings a tangible improvement to the life of the recipient.

CAS enables pupils to develop personal and interpersonal skills through experiential learning. It offers an important counter-balance to the academic pressures of the IB. A good CAS programme should be challenging, enjoyable and a personal journey of self-discovery. Each pupil has a different starting point, different goals and needs but, for many, CAS activities include experiences that are profound and life-changing. Over the years, pupils have raised tens of thousands of pounds to help build schools in Kenya, Tanzania and Nepal, as well as supporting UK-based charities. In the process they have learnt invaluable physical and creative skills.

Extended Essay

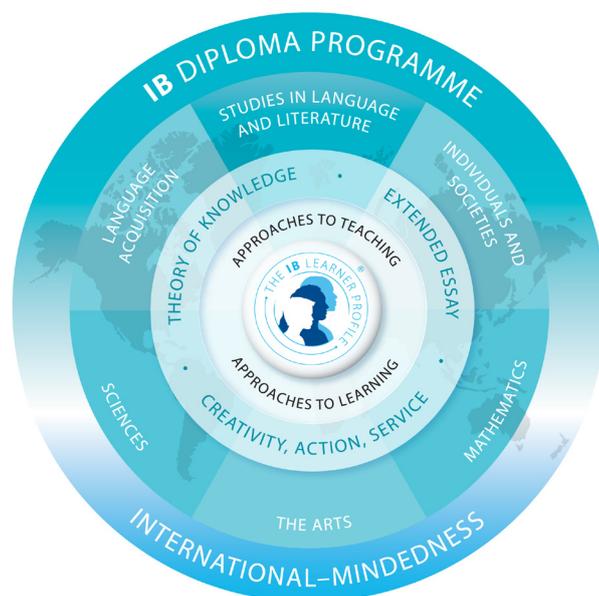
Pupils are required to research a topic around a special interest area and produce an essay of up to 4,000 words. The emphasis is on an independent piece of work, although staff are on hand to mentor and supervise. An excellent exercise in research and writing skills which provides invaluable preparation for university.

Subject Areas

The DP curriculum is made up of six subject groups and the DP core. Students choose courses from the following subject groups:

- Studies in Language and Literature
- Language Acquisition
- Individuals and Societies
- Sciences
- Mathematics
- The Arts

There are different courses within each subject group and students may opt to study an additional science, individuals and societies, or languages course, instead of a course in the arts. Students will take three subjects at higher level (HL) and three at standard level (SL). HL and SL courses differ in scope but are measured according to the same grade descriptors, with students expected to demonstrate a greater body of knowledge, understanding and skills at higher level. Each student takes at least three (but not more than four) subjects at higher level, and the remaining at standard level.



Welcome to the IB Diploma Programme

Assessment and Exams

The IB assesses student work as direct evidence of achievement against the stated goals of the Diploma Programme (DP) courses. DP 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, DP assessment encourages an international outlook and intercultural skills, wherever appropriate. Student results are determined by performance against set standards, not by each student's position in the overall rank order.

Using external and internal assessment

The IB uses both external and internal assessment in the DP.

External assessment; Examinations form the basis of the assessment for most courses. This is because of their high levels of objectivity and reliability.

They include:

- Essays
- Structured problems
- Short-response questions
- Data-response questions
- Text-response questions
- Case-study questions
- Multiple-choice questions (though these are rarely used).

Internal assessment: Teacher assessment is also used for most courses. This includes:

- Oral work in languages
- Fieldwork in geography
- Laboratory work in the sciences
- Investigations in mathematics
- Artistic performances.

Please note: All content in this guide, whilst accurate at the time of print, may be subject to change, variation or update as required during the academic year.

Studies in Language and Literature

As part of the Diploma Programme (DP), students take at least one subject from studies in language and literature. The courses offer a broad range of texts, and students grow to appreciate a language's complexity, wealth and subtleties in a variety of contexts. Students take their studies in a language in which they are academically competent. The subject consists of three courses:

- Language A: literature, which is automatically available in 55 languages and, by special request, for any other that has sufficient written literature
- Language A: language and literature, which is available in 17 languages.
- Literature and performance, which is automatically available in English, and by special request in Spanish and French.

Language A: literature (SL/HL)

This course introduces students to the analysis of literary texts. It is the course through which the IB's policy of mother-tongue entitlement is delivered and is available in 55 languages.

The course is organised into four parts, each focussed on a group of literary works. Together, the four parts of the course add up to a comprehensive exploration of literature from a variety of cultures, genres and periods. Students learn to appreciate the artistry of literature, and develop the ability to reflect critically on their reading, presenting literary analysis powerfully through both oral and written communication.

Key features of the curriculum and assessment models

- Available at higher and standard levels
- Higher level study requires a minimum of 240 class hours, while standard level study requires a minimum of 150 class hours
- Students study 13 works at higher level and 10 works at standard level from a representative selection of genres, periods and places
- Students develop the ability to engage in close, detailed analysis of literary works, building understanding of the techniques involved in literary criticism
- The study of literary works in context is emphasised, and through the study of literature in translation the student is challenged to reflect on the role of cultural assumptions in interpretation
- Students are assessed through a combination of formal examinations, written coursework and oral

activities

- The formal examination comprises two essay papers, one requiring the analysis of a passage of unseen literary text, and the other a response to a question based on the works studied
- Students also produce a written assignment based on the works studied in translation, and perform two oral activities presenting their analysis of works read

Language A: language and literature (SL/HL)

The language A: language and literature course introduces the critical study and interpretation of written and spoken texts from a wide range of literary and non literary genres. The formal analysis of texts is supplemented by awareness that meaning is not fixed but can change in respect to contexts of production and consumption. This course is available for study in 17 languages.

The course is organised into four parts, each focussed on the study of either literary or non-literary texts. Together, the four parts of the course allow the student to explore the language A in question through its cultural development and use, its media forms and functions, and its literature. Students develop skills of literary and textual analysis, and also the ability to present their ideas effectively. A key aim is the development of critical literacy.

Key features of the curriculum and assessment models

- Available at higher and standard levels
- Higher level study requires a minimum of 240 class hours, while standard level study requires a minimum of 150 class hours
- Students study six works at higher level and four works at standard level from a representative selection of genres, periods and places
- Students develop the techniques needed for the critical analysis of communication, becoming alert to interactions between text, audience and purpose
- An understanding of how language, culture and context determine the construction of meaning is developed through the exploration of texts, some of which are studied in translation, from a variety of cultures, periods and genres
- Students are assessed through a combination of formal and oral examinations plus written coursework

Language Acquisition

It is a requirement of the programme that students study at least one subject from Group 2. The main emphasis of the modern language courses is on the acquisition and use of language in a range of contexts and for different purposes while, at the same time, promoting an understanding of another culture through the study of its language.

Three subjects are available to accommodate students' interest in and previous experience of language study. The first two subjects are offered in a number of languages.

Modern Languages

- Language ab initio courses are for beginners (that is, students who have little or no previous experience of learning the language they have chosen). These courses are only available at standard level.
- Language B courses are intended for students who have had some previous experience of learning the language. They may be studied at either Higher Level or Standard Level.

The following courses are available online:

- Spanish ab initio
- Spanish B SL/HL
- Mandarin ab initio/B
- French ab initio
- French B/HL
- German B

Language ab initio (SL)

The language ab initio course is a language acquisition course for students with little or no experience of the language. The course is organised into three themes: individual and society, leisure and work, and urban and rural environment. Each theme comprises a list of topics that provide students with opportunities to practice and explore the language and to develop intercultural understanding.

Through the development of receptive, productive and interactive skills, students develop the ability to respond and interact appropriately in a defined range of everyday situations.

Key features of the curriculum and assessment models

- Only available at standard level (SL)

- The minimum prescribed number of hours is 150
- Interactive, productive and receptive skills are developed through contextualized study of language, texts and themes
- Intercultural understanding is a key goal of the course
- Students are exposed to a variety of authentic texts and they produce work in a variety of communicative contexts
- Students are assessed both externally and internally
- External assessment consists of exercises to demonstrate understanding of authentic print texts (receptive skills), two short writing exercises (productive skills), and a written assignment (integrating receptive and productive skills)
- Internal assessment tests students' abilities in listening and speaking in a genuine conversation format (integrating receptive, productive and interactive skills). Internal assessment consists of a presentation and follow-up questions based on a visual stimulus, and a general conversation with the teacher based in part on the written assignment

Language B (SL and HL)

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.

Higher and standard levels are differentiated by the recommended teaching hours, the depth of syllabus coverage, the required study or literature at HL, and the level of difficulty and requirements of the assessment tasks and criteria. The range of purposes and situations for using language in the language B courses extends well beyond those for language ab initio.

The course is organised into themes. Three core themes are required: communication and media, global issues, and social relationships. In addition, at both HL and SL, teachers select two more themes from five options provided. Finally, two works of literature are studied at HL only.

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Key features of the curriculum and assessment models

- Available at standard (SL) and higher levels (HL)
- The minimum prescribed number of hours is 150 for SL and 240 for HL
- Interactive, productive and receptive skills are developed through contextualized study of language, texts and themes
- Intercultural understanding and plurilingualism are key goals of the course
- Students are exposed to a variety of authentic texts and they produce work in a variety of communicative contexts
- Students are assessed both externally and internally
- External assessment at SL consists of exercises to demonstrate understanding of authentic print texts based on the core themes (receptive skills), a writing exercise based on the options (productive skills), and a written assignment based on the core themes (integrating receptive and productive skills)
- External assessment at HL consists of exercises to demonstrate understanding of authentic print texts based on the core themes (receptive skills), two writing exercises, one based on the core and the other based on the options (productive skills), and a written assignment based on one of the literary texts (integrating receptive and productive skills)
- 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). Internal assessment consists of an individual oral based on the options (presentation and discussion with the teacher), and an interactive oral based on the core (three classroom activities assessed by the teacher)

Individuals and Societies

Students are required to choose one subject from each of the six academic areas, including one from Individuals and Societies. They can choose a second subject from each academic area except the arts. Subjects available at ACS Egham include::

- Business Management SL/HL
- Economics SL/HL
- History
- Information technology in a global society
- Psychology

Studying any one of these subjects provides for the development of a critical appreciation of:

- human experience and behaviour

- the varieties of physical, economic and social environments that people inhabit
- the history of social and cultural institutions.

In addition, each subject is designed to foster in students the capacity to identify, to analyse critically and to evaluate theories, concepts and arguments relating to the nature and activities of individuals and societies.

Business Management

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 organisations 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, globalization, 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.

The aims of the business management course are to:

- Encourage a holistic view of the world of business
- Empower students to think critically and strategically about individual and organizational behaviour
- Promote the importance of exploring business issues from different cultural perspectives

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- Enable the student to appreciate the nature and significance of change in a local, regional and global context
- Promote awareness of the importance of environmental, social and ethical factors in the actions of individuals and organisations
- Develop an understanding of the importance of innovation in a business environment.

External assessment for HL and SL students consists of two written examination papers. Paper one is based on a pre-seen case study issued in advance, and paper two consists of structured questions based on stimulus material and an extended response question that assesses students' understanding of the key concepts of the course.

Internal assessment for HL students is a research project and for SL students a written commentary. In both tasks, students study real world business organizations. These are internally marked by subject teachers and then externally moderated by IB examiners.

Economics

The IB Diploma Programme Economics course forms part of Group 3 - individuals and societies.

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

The course emphasises the economic theories of microeconomics, which deal with economic variables affecting individuals, firms and markets, and the economic theories of macroeconomics, which deal with economic variables affecting countries, governments and societies. These economic theories are not to be studied in a vacuum - rather, they are to be applied to real-world issues. Prominent among these issues are fluctuations in economic activity, international trade, economic development and environmental sustainability. The ethical dimensions involved in the application of economic theories and policies permeate throughout the economics course as students are required to consider and reflect on human end-goals and values. The economics course encourages students to develop international perspectives, fosters a concern for global issues, and raises students' awareness of their own responsibilities at a local, national and international

level. The course also seeks to develop values and attitudes that will enable students to achieve a degree of personal commitment in trying to resolve these issues, appreciating our shared responsibility as citizens of an increasingly interdependent world.

At both standard and higher level, candidates are required to study four topics: microeconomics, macroeconomics, international economics and development economics with some sub-topics reserved solely for higher level. These sections are assessed by two examinations at standard level and three examinations at higher level. In addition to the examinations, candidates must submit an internal assessment. Both standard level and higher level economics students must produce a portfolio of three commentaries based on articles from published news media.

History

History is more than the study of the past. It is the process of recording, reconstructing and interpreting the past through the investigation of a variety of sources. It is a discipline that gives people an understanding of themselves and others in relation to the world, both past and present. The Diploma Programme history course aims to promote an understanding of history as a discipline, including the nature and diversity of its sources, methods and interpretations. It also helps students to gain a better understanding of the present through critical reflection upon the past. It is hoped that many students who follow the course will become fascinated with the discipline, developing a lasting interest in it whether or not they continue to study it formally. History is available at both Standard and Higher Level.

Students and teachers have a choice of two routes through the Diploma Programme history course. The route one history course explores the main developments in the history of Europe and the Islamic world from 500 to 1570, while the route two history course focuses on 20th century world history. Whichever route is selected the course provides both structure and flexibility, fostering an understanding of major historical events in a global context. It requires students to make comparisons between similar and dissimilar solutions to common human situations, whether they be political, economic or social. It invites comparisons between, but not judgments of, different cultures, political systems and national traditions.

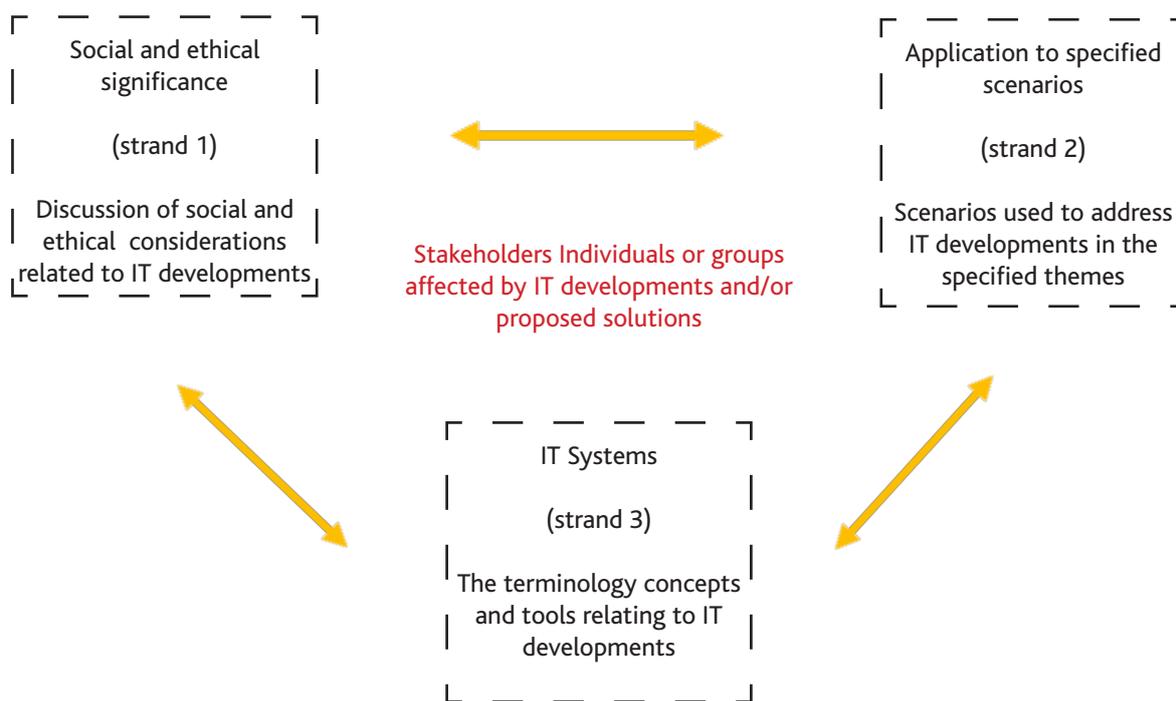
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Information Technology in a Global Society

This innovative course lies within Group 3 which examines individuals and societies. The ITGS framework is modelled on a 'triangle'. It uses an integrated approach, encouraging students to make informed judgements and decisions about the role of information and communication technologies in contemporary society. Teachers are entrusted to use professional judgement in determining the best delivery of the ITGS course.

The ITGS triangle

Composed of three strands, with interrelating topics within each:



Key features of the curriculum and assessment models

- Two courses are offered, Standard Level (SL) that requires 150 hours of teaching time over two years, and Higher Level (HL) that requires 240 hours.
- The ITGS course is based on three interconnected strands; Social and ethical significance, Application to specified scenarios, IT systems.
- The ITGS triangle lies at the heart of the pedagogy. With an understanding of the information technologies, students must be able to evaluate social/ethical issues in specified scenarios.
- The course is continuously reviewed to ensure it is current and relevant. Minor changes in syllabus content may be introduced each May, for first examinations two years later.
- ITGS requires students to have strong research and higher order thinking skills.
- Teachers may choose any relevant contemporary article to illustrate scenarios. A vibrant wiki has been developed to help teachers share resources.
- Collaboration between schools, teachers and students is encouraged. Teachers need to keep abreast of emerging online tools, applications and hardware.
- A component (HL only) is linked to the annually issued case study. This requires students to investigate a new topic related to the subject in greater depth.
- ITGS requires students to develop a product that would be suitable for a client. The aim of this assessment is to support and prepare students for the workplace.
- ITGS is the perfect platform to study social informatics at university level.

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Psychology

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. The ethical concerns raised by the methodology and application of psychological research are also key considerations of the IB psychology course.

The Diploma Programme psychology course is designed to allow for in-depth analysis, evaluation and consolidation of learning. The overall aim of the course is to give students a deeper understanding of the nature and scope of psychology. Teachers are encouraged to find ways of delivering the course that are most relevant to their students' interests and to the school's resources. This course should be taught in an integrated way, as the different parts of the syllabus complement each other. This will allow students to make comparisons and evaluate different psychological theories and arguments.

Key features of the curriculum and assessment models

- The course is available at higher level (HL) and standard level (SL).
- The minimum prescribed number of hours is 240 for HL and 150 for SL.
- Students are assessed both internally and externally.
- External assessment for SL students consists of two written papers. For HL students there are three written papers.
- Internal assessment for SL and HL students is to write a report of a simple experimental study conducted by the student. This is internally marked by subject teachers and then externally moderated by IB examiners.

Sciences

It is a requirement of the programme that students study at least one subject from Group 4. Six subjects are available and all of these subjects may be studied at Higher Level, except Sports, Exercise and Health Science:-

- Biology SL/HL
- Chemistry SL/HL
- Design Technology SL/HL
- Physics SL/HL
- Sports, Exercise and Health Science SL/HL
- Environmental Systems and Societies SL only

Interdisciplinary Subject

- Environmental Systems and Societies - which meets the Group 3 and Group 4 requirements (see additional subjects section).

Students explore the concepts, theories, models and techniques that underpin each subject area and through these develop their understanding of the scientific method. A compulsory project encourages students to appreciate the environmental, social and ethical implications of science. This exercise is collaborative and interdisciplinary and provides an opportunity for students to explore scientific solutions to global questions.

Biology

Biologists investigate the living world at all levels using many different approaches and techniques. At one end of the scale is the cell, its molecular construction and complex metabolic reactions. At the other end of the scale biologists investigate the interactions that make whole ecosystems function. Many discoveries remain to be made and great progress is expected in the 21st century.

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.

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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. Students develop the skills to work independently on their own design, but also collegiately, including collaboration with schools in different regions, to mirror the way in which scientific research is conducted in the wider community.

Key features of the curriculum and assessment models

- Available at standard (SL) and higher levels (HL)
- The minimum prescribed number of hours is 150 for SL and 240 for HL
- Students are assessed both externally and internally
- Biology students at SL and HL undertake a common core syllabus and a common internal assessment (IA) scheme.
- While there are core skills and activities common to both SL and HL, students at HL are required to study the options and some topics in greater depth as well as some additional topics. The distinction between SL and HL is one of breadth and depth.
- A practical approach to the course delivery is emphasised through the interdisciplinary Group 4 project and a mixture of both short-term and long-term experiments and investigations.
- Internal assessment accounts for 20% of the final assessment and this is assessed through a single individual investigation. This investigation may involve a hands-on approach, use of data-bases, modelling, simulation or a hybrid. Student work is internally assessed by the teacher and externally moderated by the IB.

Chemistry

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.

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Key features of the curriculum and assessment models

- Available at standard (SL) and higher levels (HL)
- The minimum prescribed number of hours is 150 for SL and 240 for HL
- Students are assessed both externally and internally
- Chemistry students at SL and HL undertake a common core syllabus and a common internal assessment (IA) scheme.
- While there are core skills and activities common to both SL and HL, students at HL are required to study some topics in greater depth, to study additional topics and to study extension material of a more demanding nature in the options. The distinction between SL and HL is one of breadth and depth
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Physics

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.

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Design Technology

DP design technology aims to develop internationally-minded people whose enhanced understanding of design and the technological world can facilitate our shared guardianship of the planet and create a better world. It focuses on analysis, design development, synthesis and evaluation. The creative tension between theory and practice is what characterizes design technology within the DP sciences subject group.

Inquiry and problem-solving are at the heart of the subject. DP design technology requires the use of the DP design cycle as a tool, which provides the methodology used to structure the inquiry and analysis of problems, the development of feasible solutions, and the testing and evaluation of the solution. In Diploma Programme design technology, a solution can be defined as a model, prototype, product or system that students have developed independently.

DP design technology achieves a high level of design literacy by enabling students to develop critical-thinking and design skills, which they can apply in a practical context. While designing may take various forms, it will involve the selective application of knowledge within an ethical framework. A well-planned design programme enables students to develop not only practical skills but also strategies for creative and critical thinking.

Design in Group 4 Sciences

Both science and technology have a fundamental relationship with design. Technology preceded science, but now most technological developments are based on scientific understanding. Traditional technology comprised useful artifacts often with little understanding of the science underpinning their production and use. In contrast, modern technology involves the application of scientific discoveries to produce useful artifacts.

The application of scientific discovery to solve a problem enables designers to create new technologies and these new technologies, in turn, can impact on the rate of scientific discovery. The aim of the DP design technology course is to foster the skill development in students required to use new and existing technologies to create new products, services and systems.

Key features of the curriculum and assessment models

- Available at standard (SL) and higher levels (HL)
- Students are assessed both externally and internally
- Physics students undertake a common core syllabus and a common internal assessment (IA) scheme.
- While there are core skills and activities common to both SL and HL, students at HL are required to study some topics in greater depth, to study additional topics and to study extension material of a more demanding nature in the options. The distinction between SL and HL is one of breadth and depth.
- A practical approach to the course delivery is emphasised through the interdisciplinary Group 4 project and a mixture of both short-term and long-term experiments and investigations.
- Internal assessment accounts for 20% of the final assessment and this is assessed through a single individual investigation. This investigation may involve a hands-on approach, use of data-bases, modelling, simulation or a hybrid. Student work is internally assessed by the teacher and externally moderated by the IB.

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Sports, Exercise and Health Science (SEHS)

The Sports, exercise and health science course is currently a standard level (SL) and Higher Level (HL) subject. This course lies within Group 4 Experimental sciences. Group 4 students explore the concepts, theories, models and techniques that underpin each subject area and through these develop their understanding of the scientific method.

SEHS students participate in a compulsory Group 4 project. This collaborative and interdisciplinary exercise provides an opportunity for students to explore scientific solutions to global questions.

Key features of the curriculum and assessment model

- SEHS is an SL course that requires 150 hours of teaching time over two years.
- The SEHS course follows the Group 4 SL curriculum model; a core syllabus and a choice of four options. Students are required to spend 40 hours on practical/investigative work.
- The SEHS course incorporates the disciplines of anatomy and physiology, biomechanics, psychology and nutrition, which are studied in the context of sport, exercise and health.
- A combination of syllabus content and experimental work provides the opportunity for students to acquire the knowledge and understanding necessary to apply scientific principles and analyse human performance.
- The SEHS course has strong international dimensions such as international sporting competition and the international bodies that regulate them. Ethical issues that exist within sporting competitions are considered.
- The comprehensive curriculum provides excellent preparation for university courses including those specifically related to Sport, Sports Science or Physical Education.

Environmental Systems and Societies

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.

The teaching approach is such that students are allowed to evaluate the scientific, ethical and socio-political aspects of issues.

ESS is one of two interdisciplinary courses offered in the Diploma Programme, Literature and Performance is the other interdisciplinary course. Because it is an interdisciplinary course, students can study this course and have it count as either an individual and societies or a science course, or both. This gives students the opportunity to study (an) additional subject(s) from any group. At ACS Egham it is included normally in Group 4.

Students will be able to study this course successfully with no specific previous knowledge of science or geography. However, as the course aims to foster an international perspective, awareness of local and global environmental concerns and an understanding of the scientific methods, a course that shares these aims would be good preparation.

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.

Key features of the curriculum and assessment models

- Available only at standard level (SL)
- The minimum prescribed number of hours is 150
- A hands-on approach to the course delivery is emphasised.
- Students are assessed both externally and internally
- External assessment consists of two written papers and provides opportunities for students to demonstrate an understanding through the application, use, synthesis, analysis and evaluation of environmental issues, information, concepts, methods, techniques and explanations.
- Internal assessment task accounts for 25% of the final assessment. This involves the completion of an individual investigation of an ESS research question that has been designed and implemented by the student. The investigation is submitted as a written report.

Mathematics

It is a requirement of the diploma programme that students study at least one course in mathematics; computer science is an elective. Four courses in mathematics are available and serve to accommodate the range of needs, interests and abilities of students, and to fulfill the requirements of various university and career aspirations:

- Mathematical studies (SL)
- Mathematics (SL)
- Mathematics (HL)

The aim of these courses are to enable students to:

- develop mathematical knowledge, concepts and principles
- develop logical, critical and creative thinking
- employ and refine their powers of abstraction and generalisation.

Students are also encouraged to appreciate the international dimensions of mathematics and the multiplicity of its cultural and historical perspectives. These courses are designed for different types of students: those who wish to study mathematics in depth, either as a subject in its own right or to pursue their interests in areas related to mathematics; those who wish to gain a degree of understanding and competence better to understand their approach to other subjects; and those who may not as yet be aware how mathematics may be relevant to their studies and in their daily lives. Each course is designed to meet the needs of a particular group of students. Therefore, great care should be taken to select the course that is most appropriate for an individual student. In making this selection, individual students should be advised to take account of the following types of factor.

- Their own abilities in mathematics and the type of mathematics in which they can be successful
- Their own interest in mathematics, and those particular areas of the subject that may hold the most interest for them
- Their other choices of subjects within the framework of the Diploma Programme
- Their academic plans, in particular the subjects they wish to study in future
- Their choice of career

Mathematical Studies SL

The course syllabus focuses on important mathematical topics that are interconnected. The syllabus is organised and structured with the following tenets in mind:

- Placing more emphasis on student understanding of fundamental concepts than on symbolic manipulation and complex manipulative skills
- Giving greater emphasis to developing students' mathematical reasoning rather than performing routine operations
- Solving mathematical problems embedded in a wide range of contexts
- Using the calculator effectively.

The course includes project work, a feature unique to mathematical studies SL within Group 5. Each student completes a project, based on their own research; this is guided and supervised by the teacher. The project provides an opportunity for students to carry out a mathematical study of their choice using their own experience, knowledge and skills acquired during the course. This process allows students to take sole responsibility for a part of their studies in mathematics.

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

Mathematics SL

The course focuses on introducing important mathematical concepts through the development of mathematical techniques. The intention is to introduce students to these concepts in a comprehensible and coherent way, rather than insisting on the mathematical rigour required for mathematics HL. Students should, wherever possible, apply the mathematical knowledge they have acquired to solve realistic problems set in an appropriate context.

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The internally assessed component, the exploration, offers students the opportunity for developing independence in their mathematical learning. Students are encouraged to take a considered approach to various mathematical activities and to explore different mathematical ideas. The exploration also allows students to work without the time constraints of a written examination and to develop the skills they need for communicating mathematical ideas.

This course does not have the depth found in the mathematics HL courses. Students wishing to study subjects with a high degree of mathematical content should therefore opt for a mathematics HL course rather than a mathematics SL course.

Mathematics HL

The course focuses on developing important mathematical concepts in a comprehensible, coherent and rigorous way. This is achieved by means of a carefully balanced approach. Students are encouraged to apply their mathematical knowledge to solve problems set in a variety of meaningful contexts. Development of each topic should feature justification and proof of results. Students embarking on this course 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.

The internally assessed component, the exploration, offers students the opportunity for developing independence in their mathematical learning. Students are encouraged to take a considered approach to various mathematical activities and to explore different mathematical ideas. The exploration also allows students to work without the time constraints of a written examination and to develop the skills they need for communicating mathematical ideas.

This course is a demanding one, requiring students to study a broad range of mathematical topics through a number of different approaches and to varying degrees of depth. Students wishing to study mathematics in a less rigorous environment should therefore opt for one of the standard level courses, mathematics SL or mathematical studies SL. Students who wish to study an even more rigorous and demanding course should consider taking further mathematics HL in addition to mathematics HL.

The Arts

Students choose courses from the following subject groups: studies in language and literature; language acquisition; individuals and societies; sciences; mathematics; and the arts. Students may opt to study an additional sciences, individuals and societies, or languages course, instead of a course in the arts.

The subjects in the arts allow a high degree of adaptability to different cultural contexts. The emphasis is on creativity in the context of disciplined, practical research into the relevant genres.

In addition, each subject is designed to foster critical, reflective and informed practice, help students understand the dynamic and changing nature of the arts, explore the diversity of arts across time, place and cultures, and express themselves with confidence and competence. Three subjects are available to students at ACS Egham at Standard or Higher Level:

- Music
- Theatre
- Visual Arts

Music

Through the music course students develop their knowledge and potential as musicians, both personally and collaboratively. Involving aspects of the composition, performance and critical analysis of music, the course exposes students to forms, styles and functions of music from a wide range of historical and socio-cultural contexts. Students create, participate in, and reflect upon music from their own background and those of others. They develop practical and communicative skills which provide them with the opportunity to engage in music for further study, as well as for lifetime enjoyment.

Both Standard Level (SL) and Higher Level (HL) music students are required to study musical perception. SL students in music are then required to choose one of three options:

- Creating (SLC)
- Solo performing (SLS)
- Group performing (SLG).

HL students are required to present both creating and solo performing.

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Key features of the curriculum and assessment models

- Available at standard (SL) and higher levels (HL)
- The minimum prescribed number of hours is 150 for SL and 240 for HL
- Students are assessed both externally and internally
- External assessment consists of a) the Listening paper (musical perception questions), and b) the Musical links investigation (a written media script investigating the significant musical links between two or more pieces from distinct musical cultures)
- Internal assessment consists, at HL, of a) Creating, and b) Solo performing. At SL students choose one option from among the following: a) Creating, b) Solo performing, c) Group performing.

Key features of the curriculum and assessment models

- Available at standard (SL) and higher levels (HL)
- The minimum prescribed number of hours is 150 for SL and 240 for HL
- Students are assessed both externally and internally
- External assessment consists of a) the Independent study (rationale, script and list of sources for a short documentary production on an aspect of film theory and/or film history, based on particular films from more than one country), and b) the Presentation (an oral presentation of a detailed critical analysis of a continuous extract from a prescribed film)
- Internal assessment consists of the Production portfolio (a student's completed film project and its accompanying documentation (at HL includes a trailer)).

Theatre

Theatre is a dynamic, collaborative and live art form. It is a practical subject that encourages discovery through experimentation, the taking of risks and the presentation of ideas to others. It results in the development of both theatre and life skills; the building of confidence, creativity and working collaboratively.

The IB Diploma Programme theatre course is a multifaceted theatre-making course of study. It gives students the opportunity to make theatre as creators, designers, directors and performers. It emphasises the importance of working both individually and collaboratively as part of an ensemble. It offers the opportunity to engage actively in the creative process, transforming ideas into action as inquisitive and productive artists.

Students experience the course from contrasting artistic perspectives. They learn to apply research and theory

to inform and to contextualise their work. The theatre course encourages students to appreciate that through the processes of researching, creating, preparing, presenting and critically reflecting on theatre - as participants and audience members - they gain a richer understanding of themselves, their community and the world.

Through the study of theatre, students become aware of their own personal and cultural perspectives, developing an appreciation of the diversity of theatre practices, their processes and their modes of presentation. It enables students to discover and engage with different forms of theatre across time, place and culture and promotes international-mindedness.

Key features of the assessment model

- Available at standard (SL) and higher levels (HL)
- The minimum prescribed number of hours is 150 for SL and 240 for HL
- Students are assessed both externally and internally

External assessment tasks

- Task 1: Solo theatre piece (HL only - 35%): Students at HL research a theatre theorist they have not previously studied, identify an aspect(s) of their theory and create and present a solo theatre piece (4–8 minutes) based on this aspect(s) of theory.
- Task 2: Director's notebook (SL-35% and HL-20%): Students at SL and HL choose a published play text they have not previously studied and develop ideas regarding how it could be staged for an audience.
- Task 3: Research presentation (SL-30% and HL-20%): Students at SL and HL plan and deliver an individual presentation (15 minutes maximum) to their peers in which they outline and physically demonstrate their research into a convention of a theatre tradition they have not previously studied.

Internal assessment task

Task 4: Collaborative project (SL and HL): Students at SL and HL collaboratively create and present an original piece of theatre (lasting 13–15 minutes) for and to a specified target audience, created from a starting point of their choice.

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Visual arts

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 sociopolitical impact as well as ritual, spiritual, decorative and functional value; they can be persuasive and subversive in some instances, enlightening and uplifting in others.

We celebrate the visual arts not only in the way we create images and objects, but also in the way we appreciate, enjoy, respect and respond to the practices of art-making by others from around the world. Theories and practices in visual arts are dynamic and ever-changing, and connect many areas of knowledge and human experience through individual and collaborative exploration, creative production and critical interpretation.

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.

Supporting the International Baccalaureate mission statement and learner profile, the course encourages students to actively explore the visual arts within and across a variety of local, regional, national, international and intercultural contexts. Through inquiry, investigation, reflection and creative application, visual arts students develop an appreciation for the expressive and aesthetic diversity in the world around them, becoming critically informed makers and consumers of visual culture.

Key features of the assessment model

- Available at standard (SL) and higher levels (HL)
- The minimum prescribed number of hours is 150 for SL and 240 for HL
- Students are assessed both externally and internally

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Common Core

All Standard and Higher Level students complete a common core.

- Human factors and ergonomics
- Resource management and sustainable production
- Modelling
- Raw material to final product
- Innovation and design
- Classic design

HL extension

Higher Level students examine four further topics designed to extend and deepen their understanding of the subject. The four additional Higher Level topics aim to introduce aspects of innovation:-

- User-centred design (UCD)
- Sustainability
- Innovation and markets
- Commercial production

Assessment

All Standard and Higher Level students complete a design project as an internal assessment task. This design project allows them to demonstrate their investigative, analytical, design thinking, design development, prototyping, testing and evaluation skills and mirrors the design processes used across the various industries that integrate design practice. Internal assessment accounts for 40% of the final assessment.

At SL, the design project requires students to identify a problem and develop a solution. It is assessed against four common criteria:

- Analysis of a design opportunity
- Conceptual design
- Development of a detailed design
- Testing and evaluation

At HL, the design project is extended to include aspects of innovation. The design project is assessed against two additional criteria:

- Commercial production
- Marketing strategies

The Standard Level course is assessed through a multiple choice paper (paper 1), a core paper, which consists of a short response and extended answer questions (paper 2), and the internal assessment design project.

At HL, paper one has more questions, and students answer an additional paper (paper 3) consisting of three structured questions based on the HL extension material, one of which is based on a case study.

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