



The Sultan's School  
**International  
Baccalaureate**  
Option Guide

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# Introduction

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The Sultan's School offers the International Baccalaureate Diploma Programme, a comprehensive and challenging pre-university course, for students entering Year 12. The International Baccalaureate subjects are examined at the end of Year 13 by The International Baccalaureate Organisation, a non-profit educational foundation based in Switzerland with its Examinations Office in Cardiff.

Additionally students also study the Government Programmes of Islamic and Social Studies which is taken into account when applying for government sponsored scholarships.



# THE IB CURRICULUM

IB Diploma Programme students choose to study six subjects in addition to three core requirements that are integral to the curriculum:



.....  
This booklet contains comprehensive information about the structure and content of each of the International Baccalaureate courses that are being offered in The Sultan's School. This information should assist students in making their choice.

# UNIQUE

## Learning Opportunities



**S**tudents attending The Sultan's School have the opportunity to enter for the full International Baccalaureate Diploma Programme (IBDP), a demanding course of study that is designed for highly motivated students aged 16 to 19. The qualification has a high reputation and allows access to the world's leading universities.

At the heart of the IBDP are three core requirements that are integral to the curriculum and make the programme unique:

### **Theory of Knowledge (TOK)**

– an internally and externally assessed interdisciplinary component exploring the different concepts of knowledge found in the subject areas;

### **Extended Essay**

– an externally assessed, independent research assignment of 4,000 words. In this way IBDP students can specialise in a subject area as preparation for university studies and gain valuable experience of writing academic papers;

### **Creativity, Action, Service (CAS)**

– a minimum of 150 hours of participation over the two years in creative, physical and service activities in the local community allowing students to gain real life experience beyond the classroom.

In addition to the core requirements students will also choose six subject based courses

(see *IB Diploma Programme Diagram*): they will study one course from Group 1, one course from Group 2, one course from Group 3, one course from Group 4 and one mathematics course from Group 5. They will then choose one additional course from either Group 3 or Group 4 or Group 6. Subjects will be taken at either standard level (SL) or higher level (HL). Subjects at Standard Level will have four periods per week on timetable while subjects taught at higher level will have six periods per week.

To enter for the full IB Diploma, students must study three of their subjects at standard level and the other three subjects at higher level.

The final grades awarded to candidates in each of the six subjects are on a scale of 7 points down to 1 point, with 7 being the highest. Theory of Knowledge and the Extended Essay are graded on a scale of A to E, with A being the highest grade. TOK and the Extended Essay contribute to the overall points through a matrix system which awards up to 3 bonus points. The CAS programme is compulsory but does not contribute to the student's point total.

The full IB Diploma is awarded for a minimum overall score of 24 points, as long as other defined standards and conditions are met. Students who fail to satisfy the entire set of requirements are awarded individual certificates for each of the subjects completed.



# IB Diploma Programme



The IB Diploma programme is designed to encourage students to study a broad range of subjects; however, it is advised that students choose subjects based upon career aspirations and future study at under-graduate level. Before selecting subjects for study, students are advised to:

- seek careers advice (The Sultan's School has an experienced University and Careers Advisor). Some courses at university require a specific combination of subjects to be studied at IB level, as well as requiring a certain level of pass in a higher level subject. Other courses at university, require only a specific points total, therefore in this instance, it would be wise to choose a combination of higher and standard level subjects to maximise your points potential;
- subject choices should reflect, to some extent, your strongest subjects at IGCSE. Be warned, higher level chemistry, physics and maths\* are particularly demanding and time consuming in homework terms – if you score lower than B at IGCSE carefully consider whether you should choose to study these subjects at higher level, for example, successful study of physics relies to a great extent on a good understanding of maths;
- it is important to remember that to qualify for the full Diploma you must achieve a minimum points total of 12 in your three Higher Level subjects;
- choose at least one higher level subject that you easily understand, that you are interested in and that you have consistently performed well in at IGCSE;
- try to choose subjects that you are good at and subjects that you enjoy, this makes learning fun and more productive;
- where possible, talk to your teachers and seek their advice about your suitability for a particular course and level of study;
- be realistic about goals and aspirations;
- remember that the IB Diploma programme is a demanding course of study, success will depend just as much upon attitude and application and dedication as upon academic ability;
- your teachers may ultimately help you make the best and most appropriate decisions.

(\*Additional Mathematics)



# The IB Diploma Courses

These courses are Literature and Language and Literature. This is for all students with a high level of fluency in the chosen language.

Arabic A (Higher Level)

Arabic A (Standard Level)

English A (Higher Level)

English A (Standard Level)

## Group 2 – Second Language (Language A or B)

B courses are for second language learners with little previous experience of the language.

Ab initio courses are for a student who has little or no experience of the target language.

Arabic B (Higher Level)

Arabic B (Standard Level)

## Group 3 – Individuals and Societies

Business and Management  
(Higher Level)

Business and Management (Standard Level)

Economics (Higher Level)

Economics (Standard Level)

Information Technology  
in a Global Society (Higher Level)

Information Technology in a Global Society  
(Standard Level)

Geography (Higher Level)

Geography (Standard Level)

## Group 4 – Experimental Sciences

Biology (Higher Level)

Biology (Standard Level)

Chemistry (Higher Level)

Chemistry (Standard Level)

Computer Science (Higher Level)

Physics (Standard Level)

Physics (Higher Level)

Environmental Systems (Standard Level)

Sports, Exercise and Health Science  
(Standard Level)

## Group 5 – Mathematics

Mathematics (Higher Level)

Mathematics (Standard Level)

Mathematical Studies (Standard Level)

## Group 6 – The Arts

Theatre Arts (Higher Level)

Theatre Arts (Standard Level)

Visual Arts (Higher Level)

Visual Arts (Standard Level)



1. تقوية اعتزاز الطالب وولائه بانتسابه إلى الأمة العربية الإسلامية، مع تغذية إيمانه بالعواطف الإنسانية التي تشعره بإنسانيته. و تربطه بعالمه الكبير ضمن أسس الحق و العدل و الخير و التراحم، ويكون ذلك من خلال ما يتعرض له الطالب في هذه المرحلة من نصوص، وموضوعات تمثل القيم والاتجاهات الإنسانية.
  2. تنمية اعتزاز الطالب بانتسابه إلى السلطنة، البلد العربي الإسلامي، ذو التاريخ العربي العريق والمكانة المتميزة.
  3. أن ينمو اتجاه الطالب نحو منجزات الحضارة الإنسانية، مع تنمية قدرته على فرز ما في هذه الحضارة واستيعاب الصالح منها والانتفاع به في تطوير مجتمعه و نبذ الغث الضار الذي يفقده هويته.
  4. أن ينمو حب الطالب للغته الأم ، بحيث يشعر باعتزاز وفخر لاستخدامه اللغة العربية ودورها في حفظ بدور أساسي في بناء الحضارة العالمية .
  5. أن يتعرف الطالب على نماذج مختارة من الأدب العربي الأصيل، كما يتعرف على نماذج النتاج الأدبي العالمي .
  6. أن تزداد قدرة الطالب على قراءة النصوص الأدبية وفهمها واستيعاب مضمونها ، والوقوف على نواحي الجمال فيها وتدوقها، مع ازدياد قدرته على تحليل هذه النصوص ونقدها، من خلال ما يقع عليه حسه وفكره من حيث عمق الفكرة وجودة التعبير، وتناسق الكلام.
  7. أن يعرف الطالب الأسس الصحيحة للموازنة والنقد الموضوعي ، وأن يتعود السمو في حديثه ومناقشته مع الآخرين .
  8. أن تنمو لدى الطالب عادة القراءة بقصد المعرفة والمتعة، حتى تتأصل فيه عادة المطالعة تأصلاً يدفعه باستمرار نحو التعلم، والاطلاع على الكتب والمطبوعات، بقصد البحث والاستقصاء والاستمتاع.
- المستويات :تقدّم دائرة اللغة العربية في مدرسة السلطان جميع مستويات اللغة العربية المتاحة في برنامج البكالوريا الدولية،وهي:

# اللغة العربية

## المستوى الأول: اللغة ( A ) : اللغة والأدب

يتألف هذا المستوى من مستويين : المستوى العالي ( HL ) ويلتحق في هذا القسم الطلاب الذين تكون لغتهم الأم اللغة العربية ، ويتمتعون بقدرات عالية في اللغة ، ومهارات ممتازة. أمّا المستوى العادي ( SL ) فيلتحق به الطلاب الذين تكون لغتهم الأم اللغة العربية، ويتمتعون بقدرات جيّدة جداً في اللغة ، ومهارات مقبولة ، لكنّها أقل مستوى من قدرات ومهارات المستوى العالي. ويتكوّن من أربعة أقسام :

القسم الأول	اللغة والسياق الثقافي	حيث يدرس مجموعة من النصوص تتعلق بجوانب من الثقافة بمفهومها الفلسفي العام كاللغة والعولمة والذكورة.... ويختبر فيها شفويا وكتابيا ( الورقة الأولى).
القسم الثاني	اللغة والتواصل الجماهيري	يدرس الطلاب في هذا القسم مجموعة من النصوص التي تتعلق بمفهوم الإعلام ووظيفته وقدرته على التأثير في الجمهور كما يحدد الطالب من خلاله الرسائل والمتلقي والسياق ويختبر فيها شفويا وكتابيا(الورقة الأولى).
القسم الثالث	النص والسياق	يدرس الطلاب في هذا القسم أعمالاً أدبية عربية ومترجمة تعدّه للاختبار النهائي حيث سيكون مطالباً بكتابة مقال حول هذه الأعمال (الورقة الثانية).
القسم الرابع	النص والنقد	يدرس الطلاب في هذا القسم أعمالاً أدبية عربية ومترجمة إضافة إلى قصيدة مختارة في الشعر بالنسبة للمستوى العالي ويختبر في هذا القسم شفويا.

## - المستوى الثاني: ( B ) :

يدرس هذا المستوى بفرعيه : ( HL+SL ) الطلاب الذين لا تتجاوز سني دراستهم في اللغة العربية أكثر من ثلاث سنوات ، وتتركز دراستهم على اللغة ، ومهاراتها بحيث يكون الطالب في نهاية البرنامج قادراً على التعامل مع اللغة قراءة وكتابة وتواصل مع الآخرين. ويندرج تحت هذا المستوى مستوى أقل منه وهو مستوى أبنيثو ( ab initio ) ويدرس هذا المستوى وفقاً للحاجة الماسة في المدرسة.



# Business & Management

**T**he IB Business and Management course is designed to give students an understanding of business principles, practices and skills. Class work and associated student research work will include both theory and practice. There will be studies of private and public sectors, locally and internationally. A great deal of “real life” material will be studied from journals, newspapers and case studies. Business and Management, as a Diploma subject, is generally very broadly based and should be contrasted with Economics, which is more focused.

Emphasis in Business and Management is placed on strategic decision-making and the operational business functions of human resource management, finance and accounts, marketing and operations management. Links between the topics are central to the course, as this integration promotes a better overview of business management. Through the exploration of six concepts underpinning the subject (change, culture, ethics, globalization, innovation and strategy), the course allows students to develop their understanding of interlinked concepts from a business management perspective

There are six examinable modules to Higher Level studies;

- Business Organization and Environment
- Human Resources
- Marketing
- Accounts and Finance
- Operations
- Business Strategy

Standard and Higher level students have five examinable modules in their studies;

- Business Organization and Environment
- Human Resources
- Marketing
- Accounts and Finance
- Operations

The Higher Level award is based on two written examinations at the end of the course (together worth 75% of the final grade) and a Research Project (the other 25%) of up to 2000 words which will be completed by the end of the first term of Year 13.

**T**he Standard Level award is also based on two written examinations at the end of the course (worth 75%) and a written Assignment (the other 25%) of up to 1500 words which will be completed by the end of the first term of Year 13.

# Economics

**E**conomics involves looking at the allocation of goods and services under the various headings of what is produced, how it is produced and who it is produced for. Economics is concerned with making the best use of the world's resources. However the definition of 'best' does not always stay the same!

These elements are considered in detail at Diploma Level under three headings of Microeconomics, which is the study of the behaviour of small groups of businesses and consumers ("customers"), Macroeconomics, which looks at the economics of whole countries and International Trade and Development, which look at the world economy and how these national economies interact on the global stage.

The International Baccalaureate Organisation has very deliberately emphasised international and development studies in its economics programmes.

The subject of Economics is comparatively specialised and should be contrasted with Business and Management, also

available, which is rather broader in nature. Economics is available at Higher and Standard Levels. Both levels involve studying five parts called Foundation and Introduction, Microeconomics, Macroeconomics, International Economics and Development Economics. The difference between the levels is that Higher Level involves additional (extension) topics in various parts of the syllabus.

Higher and Standard Level are both assessed by essay writing on Paper 1 and data response questions on Paper 2. These papers are worth 80% at Standard and 60% at the Higher level. There are however three end-of-course Higher Level examinations with an extra Economics Analysis Paper 3 worth 20% being sat by students. Coursework at both levels involves three written economic commentaries of up to 750 words each during the programme. This internal assessment accounts for 20% of the final mark for the course. The main attributes needed to study Economics are an awareness of global affairs coupled with the ability to put theory into real world situations and think laterally about the results.



# Geography

**IB** Geography is an important subject in our modern world of globalisation and pressure upon cultures and resources. The ability to view issues from a wider perspective is appropriate for working in many different career paths.

IB Geography is part of the challenging two year IB Diploma programme. IB Geography can be studied at The Sultan's School at Standard and Higher level. IB Geography is a group 3 'Individuals and Society' subject. IB classes should be separated into higher level and standard level groups.

IB Geography Paper One is the 'Core' IB Geography paper which both Higher and Standard Level students take. The students answer all four questions in the exam which accounts for 25% of the total mark for HL and 40% of the total mark for SL.

The 'Core' subjects are:

- Populations in transition,
- Disparities in wealth and development,
- Patterns in environmental quality and sustainability
- Patterns in resource consumption.

IB Geography Paper Two is the Options paper and the topics studied include eight different options including:

- Freshwater – issues and conflicts
- Oceans and their coastal margins
- Extreme environments
- Hazards and disasters – risk assessment and response

- Leisure, sport and tourism
- The geography of food and health
- Urban environments.

Higher level students complete three questions in the exam. IB Standard level students complete two questions in the exam. This exam accounts for 35% of the total mark.

IB Geography Paper Three is for higher level students only and includes topics under the main heading of Global interactions. Students write one essay in the exam which counts for 20% of the total mark.

Fieldwork is an essential part of learning geography and is compulsory for both HL and SL students. It is in the form of an Internal assessment and so is marked by the teacher and moderated by an external IB examiner. It counts for 20% of the total marks at HL and 25% at SL. It requires 20 hours of class time and must be related to a topic on the syllabus but the information must come from the student's own primary research. Each report must be no more than 2 500 words in length.

Students taking IB Geography for the diploma will be challenged as it is a demanding course and therefore it is recommended to have studied Geography at IGCSE level. However, experience has shown that students who have not taken Geography at IGCSE can be successful at IB provided they have good levels of English, are willing to work hard and show commitment to doing well.

# English

All students at The Sultan's School will study English as part of their IB Diploma and the course is available at both HL and SL.

## **ENGLISH A Language and Literature-**

This course comprises four parts, two relate to the study of language and two to the study of literature.

The study of the texts produced in a language is central to an active engagement with language and culture and, by extension, to how we see and understand the world in which we live.

A key aim of this course is to encourage students to question the meaning generated by language and texts. Students are taught to focus closely on the language of the texts they study and to become aware of the role of each text's wider context in shaping its meaning.

## **Distinction between Standard and Higher Level**

The course outline for Language A: language and literature is the same at SL and HL, but there are significant quantitative and qualitative differences between the levels.

In the literature sections the number of texts prescribed is greater at HL than at SL. In the language parts students are generally expected to cover many more texts of all kinds at HL than at SL.

Two of the assessment tasks at SL are significantly easier than the comparable tasks at HL. The first is the paper 1 textual analysis, where students address and analyse only one passage, while HL students make a comparative analysis of two. The second is the written tasks (externally assessed coursework), where HL students must produce four tasks rather than the three produced by SL students. Two of the HL written tasks are submitted for assessment compared to one at SL. One of the texts submitted at HL must be a critical response that addresses one of six set questions that requires students to explore the values, attitudes and beliefs implied in the texts they select for this task.



# Information Technology

## in a Global Society

**S**tudents come into contact with IT on a daily basis because it is so pervasive in the world in which we live. This widespread use of IT inevitably raises important questions about social and ethical issues that shape our society today. The Diploma programme Information Technology in a Global Society (ITGS) is the study and evaluation of the impact of Information Technology (IT) on individuals and society. It explores the advantages and disadvantages of the use of digitized information at the local and global level. This is a predominantly research and theory based course, with independent and appropriate use of various applications being part of the studies.

Students should be aware that no hardcopy text book will be available for this course. All materials will be available in softcopy ONLY.

Students will be required to have access to a tablet device.

### **AIMS:**

There are four aims for the ITGS course.

1. enable the student to evaluate social and ethical considerations arising from the widespread use of IT by individuals, families, communities, organizations and societies at the local and

global level

2. develop the student's understanding of the capabilities of current and emerging IT systems and to evaluate their impact on a range of stakeholders
3. enable students to apply their knowledge of existing IT systems to various scenarios and to make informed judgments about the effects of IT developments on them
4. encourage students to use their knowledge of IT systems and practical IT skills to justify IT solutions for a specified client or end-user.

### **ASSESSMENT OUTLINE:**

Standard Level Course: External  
Assessment: 70% (3 hours)

### **Internal Assessment: 30%**

Paper 1 (1 hour 45 minutes)

Five structured questions that assess in an integrated way the three strands of the syllabus (40% of overall mark)

- Social and ethical significance
- Application to specific scenarios
- IT systems

Students to answer three of five structured questions on any of the SL/HL core topics. (60 marks)

Paper 2 (1 hour 15 minutes)

This paper consists of one unseen article (30% of overall mark). Students are required to write a response to this article. (26 marks)

### Internal Assessment Project (30 hours)

This component is internally assessed by the teacher and externally moderated by the

IB at the end of the course (30% of overall mark).

The development of an original IT product for a specified client. Students must produce:

- a cover page using prescribed format
- an original IT product
- documentation supporting the product (word limit 2,000 words)

(30 marks)

Higher Level course: External Assessment: 80% (4 hours 45 minutes)

Internal Assessment: 20%

### External Assessment

Paper 1 (2 hours 15 minutes)

Seven structured questions in three sections that assess in an integrated way the three strands of the syllabus

(35% of overall mark)

- Social and ethical significance
- Application to specific scenarios
- IT systems

#### Section A

Students answer two of three structured questions on any of the SL/HL core topics.

#### Section B

Students answer one of two structured

questions based on topic 3.10, “IT systems in organizations”.

#### Section C

Students answer one of two structured questions based on topic 3.11, “Robotics, artificial intelligence and expert systems”.

(80 marks)

Paper 2 (1 hour 15 minutes)

This paper consists of one unseen article (20% of overall mark). Students are required to write a response to this article.

(26 marks)

Paper 3 (1 hour 15 minutes)

Four questions based on a pre-seen case study.

(30 marks)

### Internal Assessment Project (30 hours)

This component is internally assessed by the teacher and externally moderated by the

IB at the end of the course (20% of overall mark).

The development of an original IT product for a specified client. Students must produce:

- a cover page using prescribed format
- an original IT product
- documentation supporting the product (word limit 2,000 words)

(30 marks)



# Computer Science

**C**omputer science requires an understanding of the fundamental concepts of computational thinking as well as knowledge of how computers and other digital devices operate. The Diploma Programme computer science course is engaging, accessible, inspiring and rigorous. It has the following characteristics.

- draws on a wide spectrum of knowledge
- enables and empowers innovation, exploration and the acquisition of further knowledge
- interacts with and influences cultures, society and how individuals and societies behave
- raises ethical issues
- is underpinned by computational thinking.
- Computational thinking involves the ability to:
- think procedurally, logically, concurrently, abstractly, recursively and think

ahead

- utilize an experimental and inquiry-based approach to problem-solving
- develop algorithms and express them clearly
- appreciate how theoretical and practical limitations affect the extent to which problems can be solved computationally.

During the course the student will develop computational solutions. This will involve the ability to:

- identify a problem or unanswered question
- design, prototype and test a proposed solution
- liaise with clients to evaluate the success of the proposed solution and make recommendations for future developments.

Assessment component	Description	SL %
External assessment Paper 1 (2 hours 10 minutes)	Paper 1 is an examination paper consisting of two compulsory sections.  Section A (30 minutes approximately) consists of several compulsory short answer questions.  Section B (60 minutes approximately) consists of three compulsory structured questions. The maximum mark for this section is 45.	45%
External assessment Paper 2 (1 hour)	Paper 2 is an examination paper linked to the option studied. The paper consists of between two and five compulsory questions.	25%
Internal assessment Develop a computational solution & Group project	Students will develop a computational solution. They will also produce: • a cover page that follows the prescribed format • a product • supporting documentation	30%

# Biology

**B**iology at IB involves a fascinating and dynamic study of living organisms and how they interact with the world around them. The course offers an academically challenging, comprehensive insight into biological processes. The concepts studied will allow students to develop into confident, informed and socially aware members of society, as well as provide them with a solid foundation for

future learning. Self-motivated learning is an essential ingredient for success at this level and the skills attained during the course will continue to be an invaluable asset in one's subsequent working life.

Laboratory investigations are an integral part of this course with a minimum of 40 hours at Standard Level and 60 hours at Higher Level.

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The Sultan's School offers IB Biology at both Standard Level and Higher Level. The syllabus is divided into Core and Options.

## Core Topics

(taken at Higher Level and Standard Level)

1. Cell Biology
2. Molecular Biology
3. Genetics
4. Ecology
5. Evolution and Biodiversity
6. Human Physiology

## Additional Core

for students studying at Higher Level only

7. Nucleic Acids
8. Metabolism, Cell Respiration and Photosynthesis
9. Plant biology
10. Genetics and evolution
11. Animal physiology

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Both Higher level and Standard students will study Option D Human Physiology.

## Assessment

Assessment is in the form of both written exams and assessed practical work. Written external examinations at the end of 2 years of study account for 80% of the assessment of the course. The remaining 20% of the course is based on a single practical investigation.

## Practical work

Students will regularly complete whole or partial investigations during their studies gaining the necessary skills to allow them to successfully complete their internal assessment. The internal assessment is a 2000 word report on an investigation that they have personally designed, implemented and analysed.

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Students will also participate in an interdisciplinary Group 4 project that allows student to experience at first hand the collaborative nature of modern scientific research. Regular internal assessment involving quizzes, topic tests and yearly examinations will serve to give each student an insight into their progress in this subject. Biology at IB level is a demanding course and is regarded as one of the most difficult subjects. Consequently a high grade in Biology is also highly regarded by Universities and employers. It is recommended that for study at Higher level you should have an IGCSE Biology grade of at least B. An IGCSE grade C is the minimum recommended grade for entry to Standard Level.



# Chemistry

**C**hemistry is an experimental science that combines academic study with the acquisition of practical and investigational skills. It is called the Central Science as chemical principles underpin both the physical environment in which we live and all biological systems.

Apart from being a subject worthy of study in its own right, chemistry is a prerequisite for many other courses in higher education, such as medicine, biological science and environmental science, and serves as useful preparation for employment.

The Diploma Programme Chemistry course includes the essential principles of the subject, building on the concepts covered at IGCSE. All students will study Stoichiometric relationships, Atomic structure, Periodicity, Chemical bonding and structure, Energetics, Chemical kinetics, Equilibrium, Acids and bases, Redox processes, Organic Chemistry and Measurement but Higher level students will study these topics in more detail.

All students will study the Medicinal Chemistry option.

## Assessment

Assessment is in the form of both written exams and assessed practical work. Written external examinations at the end of 2 years of study account for 80% of the

assessment of the course. The remaining 20% of the course is based on a single practical investigation.

Laboratory Investigations are an integral part of this course with a minimum of 40 hours at Standard Level and 60 hours at Higher Level.

## Practical work

Students will regularly complete whole or partial investigations during their studies gaining the necessary skills to allow them to successfully complete their internal assessment. The internal assessment is a 2000 word report on an investigation that they have personally designed, implemented and analysed.

Students will also participate in an interdisciplinary Group 4 project that allows student to experience at first hand the collaborative nature of modern scientific research.

Chemistry at IB level is a demanding course and is regarded as one of the most difficult subjects. Consequently a high grade in Chemistry is also highly regarded by Universities and employers. It is recommended that for study at Higher level you should have an IGCSE Chemistry grade of at least B. An IGCSE grade C is the minimum recommended grade for entry to Standard Level.

# Physics

**P**hysics is the most fundamental of the experimental sciences and the course aims to develop a wide range of abilities and skills such as mathematical, analytical, problem solving and communication skills. The course encourages students to work successfully within a team.

As such it complements all the other Sciences and is an essential prerequisite for many degrees and careers such as engineering, oil exploration, architecture, medical physics and the communications and media industry. The analytical and problem solving skills developed within the course may help one be successful in many walks of life. Studying Physics provides an understanding of the world around us and the huge changes taking place in our highly technological society. Thus understanding Physics will help the decision makers of the future.

Laboratory Investigations are an integral part of this course with a minimum of 40 hours at Standard Level and 60 hours at Higher Level.

Topics studied include measurements and uncertainties, mechanics, thermal physics, waves, electricity and magnetism, circular motion and gravitation, atomic, nuclear and particle physics and energy production. Higher level students will study these subjects in more detail as well as being introduced to fields and quantum and nuclear physics. All students will study the Astrophysics option.

## **Assessment**

Assessment is in the form of both written exams and assessed practical work. Written external examinations at the end of 2 years of study account for 80% of the assessment of the course. The remaining 20% of the course is based on a single practical investigation.

## **Practical work**

Students will regularly complete whole or partial investigations during their studies gaining the necessary skills to allow them to successfully complete their internal assessment. The internal assessment is a 2000 word report on an investigation that they have personally designed, implemented and analysed.

Students will also participate in an interdisciplinary Group 4 project that allows student to experience at first hand the collaborative nature of modern scientific research.

Regular internal assessment involving quizzes, topic tests and yearly examinations will serve to give each student an insight into their progress in this subject.

Physics at IB level is a demanding course and is regarded as one of the most difficult subjects. Consequently a high grade in Physics is also highly regarded by Universities and employers. It is recommended that for study at Higher level you should have an IGCSE Physics grade of at least B. An IGCSE grade C is the minimum recommended grade for entry to Standard level.



# Sports, Exercise and Health Science

In this newly offered course, students incorporate the traditional disciplines of anatomy and physiology, biomechanics, psychology and nutrition, which are studied in the context of sport, exercise and health. Students will cover a range of core and option topics and carry out practical (experimental) investigations in both laboratories and field settings.

Students are provided with the opportunity to acquire the knowledge and understanding necessary to apply scientific principles and critically analyse human performance. The course will also incorporate elements of internationalism and ethics by considering sport, exercise and health relative to the individual and in a global context.

At present the IB offers IB sports, exercise and health science at Standard Level only. The theory work makes up the majority of the course, 110 hours is dedicated to these elements of the syllabus (see below). The laboratory investigations are an integral part of this course with a minimum of 30 practical hours at Standard Level. There is an additional 10 hours spent in this subject completing the Group 4 project, an interdisciplinary project in which students from all Science disciplines work together.

The syllabus is divided into Core and Option elements.

## **Core elements:**

- Topic 1 – Anatomy.
- Topic 2 – Exercise physiology.
- Topic 3 – Energy systems.
- Topic 4 – Movement analysis.
- Topic 5 – Skill in sport.
- Topic 6 – Measurement and evaluation of human performance.

## **Option elements:**

- Option A – Optimising physiological.
- Option B – Psychology of sport.
- Option C – Physical activity and health.
- Option D – Nutrition for sport, exercise and health.

## **Assessment:**

Assessment is in the form of both written exams and assessed practical work which will be written as project papers. A minimum of 2 written project papers must be finally submitted and 3 written examination papers will be completed in the final IB summer examinations.

Regular internal assessment involving quizzes, topic tests and yearly examinations will serve to give each student an insight into their progress in this subject.

Sports, exercise and health at IB level is a demanding Standard level course and is highly recommended in both scientific and sports fields. Consequently a high grade in this course is also highly regarded by Universities and employers. It is recommended that for study at Standard Level you should have an IGCSE Biology and/or Physical Education grade of at least a C.

# Environmental

## Systems and Societies

**A**s a trans-disciplinary subject, Environmental systems and societies is designed to combine the techniques and knowledge associated with Group 4 (the Experimental sciences) with those associated with Group 3 (Individuals and societies). By choosing to study a trans-disciplinary course as part of their diploma, students are able to satisfy the requirements of both groups 3 and 4 and can choose another subject from any group (including another group 3 or 4 subject).

It would be expected that students choosing this course in group 4 will have done so for one of three reasons:

- They have a genuine interest in environmental issues.
- They feel that Standard Level Physics, Biology or Chemistry could be too demanding.
- It would be an ideal support subject for Biology or Geography.

### **NATURE OF THE SUBJECT**

The prime intent of the course is to provide students with a perspective on the interrelationships between ecosystems 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.

There are 8 topics which embrace a number of concepts:

1. Foundations of environmental systems and societies.
2. Ecosystems and ecology
3. Biodiversity and conservation.

4. Water and aquatic food production systems and societies.
5. Soil systems and terrestrial food production systems and societies
6. Atmospheric systems and societies.
7. Climate change and energy production.
8. Human systems and resource use.

### **COURSE ASSESSMENT**

#### **Practical work:**

Students will regularly complete whole or partial investigations during their studies gaining the necessary skills to allow them to successfully complete their internal assessment. The internal assessment is a 2000 word report on an investigation or project that they have personally designed, implemented and analysed. This internal assessment is worth 25% of the final grade.

#### **External Assessment:**

External assessment consists of 2 exam papers.

- Paper 1 is a case study worth 25% of the final grade
- Paper 2 is a written paper worth 50% of the final grade.
- Paper 2 has two sections.
- Section A is short answer questions
- Section B requires a student to answer two essay questions from a choice of four titles

#### **Internal Assessment:**

Practical investigations and fieldwork weighting: 20%.



# Mathematics

The International Baccalaureate Organisation (IBO) considers that mathematical knowledge provides an important key to understanding the world in which we live. However, not only is Mathematics essential in everyday life, but its use extends into a truly diverse number of occupations: art and design, music, economics, medicine, engineering and science. In addition to this utilitarian view of Mathematics, many people appreciate the subject for its own aesthetics and its importance in philosophy. This prevalence of Mathematics in our lives, has led to the subject becoming compulsory within the IB Diploma Programme.

There are three different Mathematics courses available in the Diploma, two at standard level and one at higher level.

Mathematical Studies ST and Standard Mathematics SL are both standard level subjects. It is generally easier to get a higher grade in Mathematical Studies SL than in Standard Mathematics SL.

All three courses require students to have a graphics display calculator (GDC), it is recommended that the students have the same IB recommended model as the teachers, which is the CASIO FXCG20. It is intended that the school will bulk purchase these calculators and students will be able to buy one from the school at the start of the year.

## **Mathematical Studies SL**

### Nature:

The course provides a solid foundation in mathematical knowledge, theory and applications. It is intended for students who do not need a high level of Mathematics in their future studies. An automatic entry will be made to students who achieve a grade D or below in GCSE.

### Syllabus content:

Number - Algebra - Sets, logic and probability - Functions - Geometry & Trigonometry - Statistics - Introductory Differential Calculus - Financial mathematics.

### Assessment:

Two written papers worth 40% each and a project worth 20% (The project is an individual piece of work involving the collection, analysis and evaluation of data.)

## **Standard Mathematics SL**

### Nature:

This course is intended for students who will need a sound mathematical background for future studies in Higher Education. Automatic entry will be granted to students who achieve a grade B or better in GCSE. Other students interested in taking this course must discuss their entry with the Head of Department.

Syllabus content:

Algebra - Functions and equations - Circular functions and trigonometry - Vectors - Statistics and probability - Calculus - Mathematical Exploration.

Assessment:

Two external written papers worth 80% and an internal piece of coursework the Mathematical Exploration, worth 20% (The Mathematical Exploration is a piece of written work that involves investigating an area of mathematics.)

**Higher Mathematics HL Nature:**

This is a course of advanced Mathematics intended for the most able mathematicians. (Less than 20% of IB students worldwide choose this course.) Students who achieve a grade A or better in IGCSE may be able to take this course, but only after discussions with the IB Coordinator and the Head of Mathematics. Other students interested in taking this course must discuss their entry with the Head of Department. To be successful, students will need to be highly motivated and have a special interest in the study of Mathematics. The course is particularly intended for students who intend to study subjects in Higher Education that have a high mathematical content.

Syllabus content:

**Core:**

Algebra - Functions and equations - Circular functions and trigonometry - Vectors - Statistics & probability - Calculus - Exploration.

*(Although these topics are the same as for the SL course, they are studied and assessed to a much higher level in the HL course.)*

Option: One of: Statistics & probability - Sets, relations and groups - Calculus - Discrete mathematics. Assessment:

Three written papers worth 30%, 30% and 20% and an internal piece of coursework the Mathematical Exploration, worth 20% (The Mathematical Exploration is a piece of written work that involves investigating an area of mathematics.)



# Theatre Arts

The IB Theatre Arts course consists of three core areas of study which all form the main components of the assessments. Students are required to investigate the core syllabus areas from the perspectives of creator, designer, director, performer and spectator through the following activities:

- Creating theatre based on theatre theory (HL only).
- Working with play texts.
- Examining world theatre traditions and performance practices.
- Collaboratively creating original theatre.

Final examination takes place in the form of four Internal and Externally assessed pieces of coursework.

## External assessment details

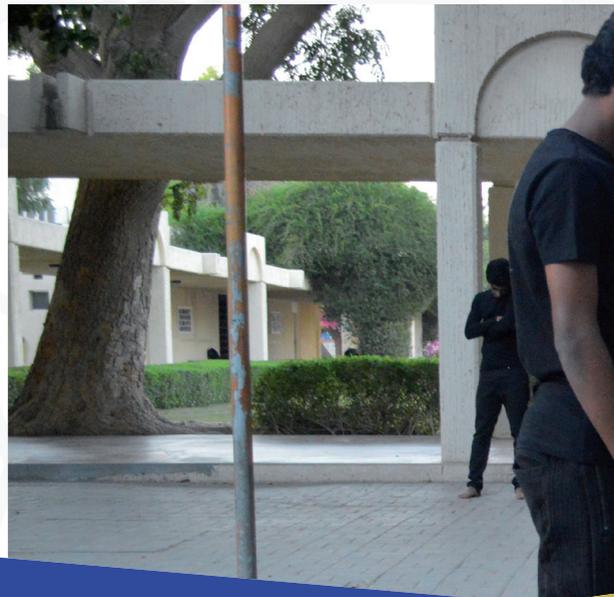
### Task 1: Solo theatre piece (HL only) 35%

Students at HL research a theatre theorist they have not previously studied, identify an aspect (or aspects) of their theory, create and present a solo theatre piece (4–8 minutes) based on an aspect(s) of this theory. This task develops, builds on and extends the skills and understandings developed in the other areas of the syllabus. It requires students to create a fully produced piece of theatre based on theatre theory.

Students submit a report (maximum 3,000 words) which includes their research into and understandings of the theorist, the theory and the context of the theorist's work. It also records their practical explorations of the selected aspect(s) of theory, the development of the solo theatre piece and analysis and evaluation of the theatre piece.

### Task 2: Director's notebook SL 35%, HL 20%

Students at HL and SL independently choose a published play text, read the text and record their personal responses. They then research and record the cultural and/or theoretical context of the play and identify ideas the playwright may be addressing, explore the play and record their own ideas regarding how this play may be staged for an audience, explain their directorial intention(s) and explain how this will inform their staging of two



particular moments of the play, reference live performances they have experienced and how these have influenced, inspired or informed their directing of these moments.

This process is recorded and presented in the form of a director's notebook (20 pages maximum) which is made up of visuals and words.

**Task 3: research presentation SL 30%, HL 20%**

Students at HL and SL plan and deliver an individual presentation (15 minutes maximum) to their peers in which they outline their research and exploration of a theatre tradition they have not previously studied. The presentation must include a physical demonstration of the student's practical and physical explorations of the performance convention and its application to a moment of theatre.

**Internal assessment task**

**Task 4: Collaborative project SL 35%, HL 25%**

Students at HL and SL collaboratively create and present an original piece of theatre (lasting 13–15 minutes) to a specified target audience from a starting point selected by the ensemble. They submit a process portfolio (15 pages maximum) which documents their own individual approaches and skills, the exploration of the starting point selected by the ensemble, the nature of the collaboration and the student's individual contribution to the creation and presentation of the piece of theatre. The student submits a video recording (4 minutes maximum) in support of the process portfolio which the student selects from the unedited video recording of the created piece.



# TOK

**T**heory of Knowledge is at the core of the full IB Diploma. It is studied by all students who are seeking to qualify for the full IB Diploma. It may be helpful to think of TOK as the glue that unifies the curriculum as a whole, rather than as a single component within that whole.

Sultan's School students are in a relatively unique context. Many are genuinely bilingual or at least close to being in that position. TOK will seek to develop our students' understanding of the world in a way that will help them to unify all aspects of their educational and life experiences, with particular focus on unifying their sometimes contrasting English and Arabic experiences. This should enable our students to develop a genuinely international and intercultural perspective whilst continuing to value their own culture and heritage.

The course is designed around the asking of open questions that make students consider their total perspective on:

- Themselves;
- Their society or societies;
- The wider world;
- Metaphysics – 'beyond the known world'.
- Within these categories, students will need to consider:

**Knowers** – when we say we know something, what is our own function in that equation?

**Ways of Knowing** – when we know something, what are we actually doing?

**Areas of Knowledge** – what different types of knowledge are there?

As 'the glue' in the main curriculum, TOK will constantly encourage students to be on the lookout for overlaps between different areas of their own educational and life experiences. The course will thus be student-centred, with the main objective of encouraging students to think. Questions will generally take priority over answers, as each student learns to ask the questions that are necessary for them to reflect on and advance their own total perspectives. We recognise that this will be a challenging process for many of our students, but also one which both we and the IBO feel is an essential part of the preparation that is necessary for students to enter the adult world.

Students can also be awarded up to three additional points for their combined results on Theory of Knowledge and the extended essay. Therefore, the highest total that a Diploma Programme student can be awarded is 45 points.

# The Extended Essay

**T**he Extended Essay is the second element at the core of the full IB Diploma. All students who are seeking to qualify for the full IB Diploma must research and write an extended essay of 3600 – 4000 words. Fulfilment of this task ensures that pupils develop the independent research skills and formal written communication skills expected by universities. The task should take about 40 hours to complete. The essay is written on one of some two dozen subject choices - language or literature, any of the humanities or sciences etc.

Students will be required to choose a suitable research question, research the aspects, filter the information and

then synthesize and communicate a logical and balanced argument. This needs to be done in the student's own words, and include correct references of all sources including texts and websites. The Extended Essay provides excellent practical preparation for tertiary, undergraduate research.

Students will be supported and guided in this endeavour by a member of staff of The Sultan's School, who will act as a supervisor. As with TOK and CAS, failure to achieve to a minimum standard will result in the student's Diploma being held back - sure testimony to the importance given to this aspect. Experiencing learning and is designed to involve students in new roles. The emphasis is on learning by doing real tasks with real consequences and reflecting on these experiences over time.



# Visual Arts

The IB Visual Arts course consists of three core areas of study which all form the main components of the assessments. Students are required to understand the relationship between these areas and how each area informs and impacts their work in visual arts. Students are required to investigate the core syllabus areas through exploration of the following practices:

- theoretical practice
- art-making practice
- curatorial practice.

## External assessment details

### Part 1: Comparative study 20% SL & HL

Students at SL & HL analyse and compare different artworks by different artists. This independent critical and contextual investigation explores artworks, objects and artifacts from differing cultural contexts. Students submit 10–15 screens which examine and compare at least three artworks, at least two of which should be by different artists. The work selected for comparison and analysis should come from contrasting contexts (local, national, international and/or intercultural). HL students submit 3–5 screens which analyse the extent to which their work and practices have been influenced by the art and artists examined.

### Part 2: Process portfolio 40% SL & HL

Students at SL & HL submit carefully selected materials which evidence their experimentation, exploration, manipulation and refinement of a variety of visual arts activities during the two-year course.

- SL students submit 9–18 screens which evidence their sustained experimentation, exploration, manipulation and refinement of a variety of art-making

activities. For SL students the submitted work must be in at least two art-making forms, each from separate columns of the art-making forms table.

- HL students submit 13–25 screens which evidence their sustained experimentation, exploration, manipulation and refinement of a variety of art-making activities. For HL students the submitted work must have been created in at least three art-making forms, selected from a minimum of two columns of the art-making forms table.

## Internal assessment task

### Part 3: Exhibition 40% SL & HL

Students at SL submit for assessment a selection of resolved artworks from their exhibition. The selected pieces should show evidence of their technical accomplishment during the visual arts course and an understanding of the use of materials, ideas and practices appropriate to visual communication.

- Students submit a curatorial rationale that does not exceed 400 words (SL) 700 words (HL).
- Students submit 4–7 artworks (SL) 8–11 artworks (HL).
- Students submit exhibition text (stating the title, medium, size and intention) for each selected artwork.

SL students may submit two photographs of their overall exhibition. These exhibition photographs provide an understanding of the context of the exhibition and the size and scope of the works. While the photographs will not be used to assess individual artworks, they may give the moderator insight into how a candidate has considered the overall experience of the viewer in their exhibition.



**T**he Creativity, Activity and Service programme is the third element at the core of the full IB Diploma. All students who are seeking to qualify for the full IB Diploma must successfully participate in and fulfil the requirements of the CAS programme during 2 years of study.

CAS is a framework for experiencing learning and is designed to involve students in new roles. The emphasis is on learning by doing real tasks with real consequences and reflecting on these experiences over time.

It is also an extra-curricular programme that is designed to challenge and extend a student. Students must engage in activities that include a balance of creativity, action and service.

Creativity is interpreted as imaginatively as possible to cover a wide range of art and other activities.

Activity does not restrict itself to expeditions, sport, or physical training, but may include carrying out creative or service projects.

Service emphasises community or social service.

Students must complete 50 hours of each as a minimum!

The IBO's goal is to educate the whole person and foster responsible, compassionate citizens. The CAS programme encourages students to share their energy and special talents with others.

**The aims of CAS are to:**

complement the academic side of the curriculum; challenge and extend the individual student by developing a spirit of self-discovery and self-reliance; encourage the development of a student's individual skills and interests.

Students are expected to be involved in the equivalent of at least two hours a week of CAS over the two-year time period. IB students are encouraged to excel beyond the minimum 150 CAS hours required during their junior and senior years and make meaningful contributions through a broad range of activities.





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THE SULTAN'S SCHOOL

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