



Leighton Park School



International Baccalaureate Course Descriptions

2011/2013

Group 1: English

Course Overview: IB English can be studied at Standard and Higher Level.

The compulsory English component of the IB course is exciting and challenging and concentrates on the study of a wide range of different literature. Four different genres will be covered, for instance, novel, drama, poetry and autobiography and works will be taken from different periods of time. This allows the student to have a very solid grounding in all types of literature from Shakespeare to JM Coetzee. Some of the texts will be World Literature in translation in order to expand the frame of reference beyond English culture.

All the texts on the syllabus will be studied in class, even though you may not be finally examined on every text. Lessons will not only be teacher-led but will also involve discussion and presentation of material by the students, essential in effective preparation for the oral examinations. It is also expected that students will read around the texts, to learn something of the writers and something of the context in which the works were written.

There are four compulsory components linked in different ways at both Standard and Higher level. Texts from other countries are studied as well as works from the United Kingdom and connections are made through genres, time periods, theme and author. A number of the texts are prescribed, but there is room for individuals to pursue their own literary interests. As well as the analytical study of Literature there is the chance to do imaginative and creative responses to texts studied.

Assessment includes a written commentary on an unseen passage or prose or poetry, genre-specific essay questions, comparative coursework from range of World Literature texts, an oral presentation and a spoken commentary. At Higher level there are two externally set papers each lasting two hours. The first paper requires candidates to comment on unseen texts and the second paper tests candidates on works they have studied during the course.

The second component is a coursework unit of one or two essays on texts studied during the course. The third strand of the assessment has two compulsory oral components: in one component candidates comment upon an extract of literature and the other is the presentation of a topic chosen by the candidate.

The Standard paper has the same structure and format as the Higher paper but the examination length is shorter and the coursework demands are reduced.

Skills gained on this course

- Improved confidence and communication skills as the course will develop oral and written powers of expression
- An appreciation of a wide range of literature from different periods, in different styles, genres and contexts
- An extended awareness of other cultures from their literature, leading to a global perspective
- The ability to compare and contrast texts and analyse them in detail.

Beyond IB

The IB course would be ideal for students who have an interest in literature and are interested in the cultural diversity reflected in the study of English Literature – and many other arts-based courses – at university. The ability to analyse texts and communicate effectively is useful in any career and this course. Candidates will have to work independently and collaboratively and be comfortable with both written and spoken testing.

Group 2: German B

Course Overview: IB German B can be studied at Standard and Higher Level.

The IB German course enables students who already have GCSE German to build on this and learn to use German in a wide range of situations and contexts. IB students will become proficient in speaking, listening, reading and writing in German and will gain an understanding of German culture and the importance of good international relations. Media such as radio and television will be used in addition to written sources like textbooks and newspapers. HL students in particular will have acquired a more than sufficient base from which to pursue their study of German at university or use it in the workplace. Throughout the course, students are encouraged to develop a spirit of internationalism and understanding of cultures which may be vastly different from their own.

Throughout the course, grammar and vocabulary are taught as integral to the Themes and Texts. Some literary extracts will be studied amongst a wide array of other authentic German texts (oral and written). Independent work is necessary to develop vocabulary and expression and students will share their knowledge in a series of student-led classroom activities. The course will foster an understanding of three interrelated areas: language, cultural interaction and message through the study of the topics which will enhance their knowledge and understanding of international issues. These **topics** will sharpen their analytical thought processes through the production of **essays and personal presentations on: Arts and media, Education and work, Social and Health issues, Leisure, tourism, travel and transport, the Environment, Ethical issues, Beliefs and values, Family and relationships, and Politics and international issues.**

In addition, students who take the **higher level** of language B will study:

- **Literature**
- **Recent German historical events**

Assessment involves recorded interactive and individual orals, examination on text handling and comprehension (reading and writing) and the production of a written text.

Paper 1: Text Handling 1 hour 30 minutes 40%

Paper 2: Written Production 1 hour 30 minutes 30%

Several oral activities to be internally assessed by the teacher. One of them to be externally moderated by the IBO. 30%

Skills gained on this course

- Fluency and accuracy in understanding and producing spoken and written German from a variety of registers and in a wide range of contexts
- An appreciation and understanding of the diversity of Germanic culture as well as the opportunity to experience it first hand
- International awareness
- Improved confidence and communication skills

Beyond IB

In addition to those who continue to study German at university, many students combine their language proficiency with a further skill to use German to complement their studies of business, law, technology etc. In a competitive international marketplace, firms both large and small are actively seeking young, well-rounded professionals with good language skills and an international outlook.

Group 2: Spanish B

Course Overview: IB Spanish can be studied at Standard and Higher Level.

The IB Spanish course enables students who already have GCSE Spanish to build on this and to learn to use Spanish in a wide range of situations and contexts. It aims to give students the opportunity to explore the culture of Spanish speaking countries whilst developing their linguistic competence across a broad array of communicative contexts. Students will foster an international outlook and all-round awareness of the Hispanic language and culture shared by almost 400 million Spanish speakers worldwide. HL students in particular will have acquired a more than sufficient base from which to pursue their study of Spanish at university or use it in the workplace. International diversity provides a central focus throughout the course, encouraging students to develop a spirit of internationalism and understanding of cultures which may be vastly different from their own. Throughout the course, grammar and vocabulary are taught as integral to the Themes and Texts. Some literary extracts will be studied amongst a wide array of other authentic Spanish texts (oral and written). Independent work is necessary to develop vocabulary and expression and students will share their knowledge in a series of student-led classroom activities. The course will foster an understanding of three interrelated areas: language, cultural interaction and message through the study of the topics which will enhance their knowledge and understanding of international issues. These **topics** will sharpen their analytical thought processes through the production of **essays and personal presentations on: social and health issues, leisure, beliefs and values, family and relationships, and communication and media, global issues and cultural diversity.**

In addition, students who take the **higher level** of language B will study:

Literature - 2 works

Assessment involves recorded interactive and individual orals, examination on text handling and comprehension (reading and writing) and the production of a written text.

Paper 1: **Standard** – 1hr 15mins Text handling.
Higher – 1hr 30mins

Paper 2: **Standard** – 1hr 15mins Written production
Higher – 1hr 30mins

Written assignment: **Standard** – 300-400 words creative writing task
Higher – 400-700 words creative response to literature

Two oral activities to be internally assessed by the teacher and externally moderated by the IBO.

Skills gained on this course

- Fluency and accuracy in understanding and producing spoken and written Spanish from a variety of registers and in a wide range of contexts
- An appreciation and understanding of the diversity of Hispanic culture as well as the opportunity to experience it first hand
- International awareness
- Improved confidence and communication skills

Beyond IB

In addition to those who continue to study Spanish at university, many students combine their language proficiency with a further skill to use Spanish to complement their studies of business, law, technology etc. In a competitive international marketplace, firms both large and small are actively seeking young, well-rounded professionals with good language skills and an international outlook.

Group 3: Economics

Course Overview: IB Economics can be studied at Standard and Higher Level.

The discipline of Economics exists in an international context at its most basic, the fundamental economic problem relates to all societies; it is a common issue which ties all communities together. Some topics explicitly address international issues, such as trade and economic development, but an international perspective can and will be applied across the board. Higher Level students will learn about the complex relationships established in a global economic environment, the theoretical underpinning of these links and appreciate the different perspectives of these relationships, particularly as the current Neo-Classical orthodoxy comes under growing pressure. As a social science, the subject adopts an empirical approach to the study of social phenomena. Based on a methodology dominated by 'modelling', the resultant body of thought constitutes what is termed 'positive economics'. An appreciation of this process should assist students understand the 'theory of knowledge' that underlies the subject.

The Standard Level course will provide the 'core' material of the subject, developed in the Higher Level course. The curriculum aims to provide a broad, coherent, relevant and stimulating foundation of knowledge and understanding of Economics; **examining topics such as economic systems; microeconomics: markets and how they work and market failure; macroeconomics: national income, economic growth, modelling the economy, government policy and international economics (globalisation and the European single market), economic performance and development.**

Fundamentally it is a student-centred course and students will develop as independent, critical and reflective learners. Each topic will be launched by an introductory strategic presentation to offer an initial framework for the student-led work that will follow. Based on case studies, students will develop their knowledge and understanding of economics through their research of relevant concepts and theories, learning how to use the analysis in an applied manner.

Higher Level students will give specific consideration to material that relates cost analysis, business decision making, models of market structure and market efficiency, the concepts of the multiplier and the accelerator and an introduction to Keynesian and Neo-Classical perspectives of macroeconomics.

Skills gained on this course

- Development of the capacity to think critically about individual and organizational behaviour
- Enhancement of the student's ability to make informed economic decisions
- The holistic development of each student as a practitioner of Economics.
- Establishment of a confident and critical command of key economic concepts, theories and models and application of knowledge and understanding to current economic events, ethical, social or cultural concerns and debates.
- The ability to relate economic discussions to a much wider historical, political and ethical context – locally, regionally and globally.
- The opportunity to question the underlying assumptions, validity and usefulness of the models encountered
- Appreciation of the social and ethical responsibilities associated with businesses operating in international markets.

Assessment of the learned curriculum will be by a range of multiple choice questions, short-answered questions relating to data response/stimulus material, extended response questions, the production of economic commentaries, class presentations and essays.

Beyond IB

Economics is widely accepted by universities and employers. This subject can open up opportunities in management, retailing, marketing, sales, accountancy, research, the civil service and consultancy. Economics can be useful in many other subjects and careers because of the range of transferable skills learnt.

Group 3: Geography

Course Overview: IB Geography can be studied at Standard and Higher Level.

IB Geography aims to develop understanding of geography in all forms, but with particular emphasis on the ways in which humans interact with the environment around them. Students will develop an understanding of the interdependencies that exist within the world at a variety of levels, together with an understanding of the need to plan and manage certain environments in a sustainable way. The course aims to give students the tools and skills required to research and write an individual geographical study using appropriate methodologies and techniques of geographical enquiry.

Geography is intrinsically an international subject and this will be reinforced through the study of different areas of the world. The inclusion of the 'Extreme Environments' module for example forces students to look beyond their own environment, as does the study of less economically developed urban areas or population growth. The links to international study are tremendous and the interdependency of the globe will be viewed for example, through the study of globalisation and climate change.

IB Geography is part of a challenging two year programme administered by the International Baccalaureate Organisation (IBO).

Paper One is the Core IB Geography paper, which both Higher and Standard Level students take. The core unit is called ***Patterns and Change*** and includes *Populations in Transition, Disparities in Wealth and Development, Patterns in Environmental Quality and Sustainability and Patterns in Resource Consumption*.

Paper Two is the Optional Themes IB Geography Paper. IB Geography Higher Level students complete three optional themes. IB Geography Standard Level students complete two optional themes. The IB Geography optional themes include *Freshwater - Issues and Conflicts, Extreme Environments, Hazards and Disasters - Risk Assessment and Response, Leisure, Sport and Tourism, The Geography of Food and Health and Urban Environments*.

Paper Three is the Extension Paper for Higher Level IB Geography Students. The Higher Level extension unit is called ***Global Interactions*** and includes *Measuring Global Interactions, Changing Space - the Shrinking World, Economic Interactions and Flows, Environmental Change, Socio-cultural Exchanges, Political Outcomes and Global Interactions at a Local Scale*.

Geographical skills will be integrated throughout the two year course, taught within appropriate topics/modules within the syllabus in preparation for each student's individual geographical study. **IB Geography Internal Assessment is based on the individual fieldwork investigation.** Higher Level and Standard Level IB Geography students will attend a residential field course where they will collect primary data and carry out a number of geographical skills. Following the fieldtrip students will write-up their investigation within the 2,500 word limit.

For more information visit www.ibo.org or please contact Caroline Kirby (Head of Geography) or Karen Gracie-Langrick (IB Diploma Co-ordinator) at Leighton Park School.

Group 3: History

Course Overview: IB History can be studied at Standard and Higher Level.

In an age of globalisation and technological development, different cultures are increasingly in contact and interdependent. The IB approaches History from an international, largely twentieth century, perspective and through the study of individuals and societies in the widest context: political, social, economic, religious, technological and cultural, it aims to deepen our understanding of a shared past as well as present.

IB History has a global focus. Through the study of the 20th Century World History topics the **Development of Authoritarian State**, such as those under Lenin and Stalin in Russia, Hitler in Germany, Fidel Castro in Cuba and Peron in Argentina, and the impact of **The Cold War** around the world, students are encouraged to engage with historical enquiry, explanation and interpretation and to face the problem of determining the accuracy of what is claimed to be reliable historical knowledge. A focus, through documentary sources, on the prescribed subject **Peacemaking and Peacekeeping: International Relations 1918-1935** encourages an examination in-depth of major world issues and develops the ability to comprehend, analyse and evaluate source material as historical evidence. HL History students will also study the **Unification and consolidation of Germany and Italy 1815-90; Imperial Russia, revolutions, emergence of Soviet State 1853-1924; and the Soviet Union and Eastern Europe 1924-2000.**

Assessment involves written examination papers on International Relations and 20th Century World Topics. For HL students there is an additional written paper on Aspects of the History of Europe and the Middle East. All students also undertake a 12,000-15,000 word historical investigation, using a good range of historical sources, as coursework.

Skills gained on this course

- The acquisition and understanding of historical knowledge from different cultures in breadth and in depth
- A developing appreciation and understanding of History as a discipline, including the nature and diversity of its sources, methods and interpretations
- International awareness and understanding of people living in a variety of places at different times
- A better understanding of the present through an understanding of the past
- An ability to use and communicate historical knowledge and understanding
- Ability to distinguish reasoned argument from prejudice and propaganda.

Beyond IB

History is more relevant to careers than might be immediately apparent. Many careers utilise the skills of research, analysis and report-writing skills developed by History students. If students plan to work in the media, politics or diplomatic service then it is important to have knowledge of historic events in order to understand current affairs. Careers involving History directly include Archaeology, Museum, Heritage and archiving work, Conservation and Architecture.

GROUP 4: EXPERIMENTAL SCIENCES

Aims: The aims of the course are as stated in the specification, namely:

- provide opportunities for scientific study and creativity within a global context that will stimulate and challenge students
- provide a body of knowledge, methods and techniques that characterize science and technology
- enable students to apply and use a body of knowledge, methods and techniques that characterize science and technology
- develop an ability to analyse, evaluate and synthesize scientific information
- engender an awareness of the need for, and the value of, effective collaboration and communication during scientific activities
- develop experimental and investigative scientific skills
- develop and apply the students' information and communication technology skills in the study of science
- raise awareness of the moral, ethical, social, economic and environmental implications of using science and technology
- develop an appreciation of the possibilities and limitations associated with science and scientists
- encourage an understanding of the relationships between scientific disciplines and the overarching nature of the scientific method.

Objectives: The objectives of the course are as stated in the specification, namely :

1. Demonstrate an understanding of:
 - a. scientific facts and concepts
 - b. scientific methods and techniques
 - c. scientific terminology
 - d. methods of presenting scientific information.
2. Apply and use:
 - a. scientific facts and concepts
 - b. scientific methods and techniques
 - c. scientific terminology to communicate effectively
 - d. appropriate methods to present scientific information.
3. Construct, analyse and evaluate:
 - a. hypotheses, research questions and predictions
 - b. scientific methods and techniques
 - c. scientific explanations.
4. Demonstrate the personal skills of cooperation, perseverance and responsibility appropriate for effective scientific investigation and problem solving.

Demonstrate the manipulative skills necessary to carry out scientific investigations with precision and safety.

Group 4: Biology

Course Overview: IB biology can be studied at Higher Level and Standard Level

Will this course suit me?

You will need an interest in the biology of animals and plants and be able to adopt a scientific approach. You will need to fit the IB learner profile and enjoy practical experimentation. You will also require good organisational and time management skills as there is a lot of content to cover in the course.

Course Description

Biology is the study of living organisms. The IB course addresses four basic biological concepts. These are: structure and function (considered at the molecular, cellular and organism level); universality versus diversity (ubiquitous biochemicals and structures like cells and membranes exist in a biological world of enormous diversity); equilibrium within systems and evolution, the underlying concept which draws together the above themes.

The course is organised into compulsory core topics and options. There is common core material for standard and higher-level students, which includes topics on: **cells; biochemistry; genetics; ecology and evolution; human health and physiology and statistics**. There is additional higher level core material which covers some of these topics in more depth as well as **nucleic acids and proteins; respiration and photosynthesis; plant science and genetics**. In addition two option topics are studied, currently **microbes and biotechnology and ecology and conservation**.

There is also a requirement to compile an extensive practical file throughout the two year course. A log of all practical work is submitted; this includes both assessed and non-assessed practical work. Practical work will include microscope work, including the preparation of slides; experiments designed to illustrate aspects of the theory and also develop practical skills; the use of ICT and data loggers, spreadsheets, databases and computer simulations; assessed individual investigations and field work. There will be a compulsory, chargeable field course in June of the Lower Sixth.

There will be a project undertaken by all IB students (the Group 4 project). This will require 10 hours of practical work and will assess 'personal skills' such as motivation, perseverance and working with others.

Skills gained on this course

- The ability to assess the validity of biological information, experiments, inferences and statements and apply biological principles and concepts to unfamiliar situations, including those that relate to the ethical, social, economic and technological aspects of the subject
- An understanding of scientific method and the tentative nature of scientific knowledge
- The ability to interpret and translate from one form to another, data presented as continuous prose or in tables, diagrams, drawings and graphs
- The ability to organise relevant information clearly and coherently, using appropriate form, style and vocabulary.

Benefits of the Course.

The course teaches a range of practical skills and applies concepts to work-place examples. Biology is an accessible science for students whose main strengths are more arts or language based, as well as being an important subject for any student intending to pursue a science-based career in the future.

Beyond IB

Biology can lead to degree choices from anatomy to zoology and careers from medicine and microbiology to optometry and oceanography based anywhere from a laboratory to the Antarctic!

Group 4: Chemistry

Course Overview: IB Chemistry can be studied at Standard and Higher Level and can be taken as an option in Group 4 or 6.

The IBDP Chemistry course aims to provide the student with the knowledge, methods and techniques that enable students to study Chemistry in a global context, fostering and developing their practical, theoretical, creative and analytical skills. The material will stimulate them to extend their learning independently, to evaluate and synthesize information from a wide variety of sources, including ICT based materials, books, magazines and periodicals. They will also be encouraged through Science and Technology lectures and presentations arranged either on site or through educational visits. The distinction between SL and HL is one of breadth and depth.

Students will study how scientific information is generated and communicated, how it has evolved and how scientific method is deployed in today's increasingly technologically based society. They will be expected to be able to analyze the impact of scientific developments on modern society from moral, social, ethical, economic and environmental perspectives.

The course includes Quantitative Chemistry; Atomic Structure; Bonding; Periodicity; Energy Changes; Kinetics; Equilibrium; Acids and Bases; Redox and Organic Chemistry. Theory is supported by an extensive practical programme, comprising approximately 25% of the course. This seeks to develop not only laboratory skills and techniques but also professional approaches to design; recording and reporting of investigative work; obtaining appropriate and reliable evidence to support a scientific theory or prediction; and, ensuring valid conclusions are drawn from the evidence obtained. As well as including standard experimental procedures, students will carry out a multi-disciplinary collaborative project (the Group 4 Project) that will involve all IB students contributing to 10 hours of practical work on a scientific or technological topic and will assess 'personal skills' such as motivation, perseverance and working with others. There is scope to use specialist equipment such as data logging to enhance both the quality and sophistication of the analysis.

Assessment is by examinations, practicals and the Group 4 project.

The school is closely linked both educationally and by location to Reading University and has access to a number of its academic staff who are working on Science and Technology issues on a global basis. It has a resident environmental graduate who maintains close links between the school and the University on these issues and who will assist the IB Chemistry students in developing activities to support the curriculum in this area. There are many international companies and research organizations in the area that are Science and Technology orientated. All provide the perspective of international development in the field of Chemistry required by the students.

Skills gained on this course

- an open-ended, thinking and questioning approach to Chemistry
- an appreciation of the possibilities, as well as limitations, associated with Chemistry and Chemists and of the importance of international collaboration to resolving issues of a scientific nature
- an awareness of moral, ethical social, economic and environmental implications of using Chemistry in both a national and international context
- an understanding of the interconnection of all scientific disciplines.
- communication, evaluation analysis, ICT and research skills.

Beyond IB

IB Chemistry is recognized as the appropriate route for entry into degree courses in Medicine and related subjects, Pharmacy, Dentistry, Pharmacology, Chemistry, Chemical Engineering and Biochemistry. It is a recommended choice for those studying any Physical Science, Environmental Sciences, Forensic Science and Materials Science. The IBDP course in addition offers the broader perspectives and skills in languages, theory of knowledge, critical thinking, problem-solving and independent learning, all highly valued by both universities and employers.

Group 4 Physics

Aims

Through studying any of the Group 4 subjects, students should become aware of how scientists work and communicate with one another. While the “scientific method” may take on a wide variety of forms, it will generally involve the formation, testing and modification of hypotheses through observation and measurement, under the controlled conditions of an experiment. It is this approach, along with the falsifiability of scientific hypotheses that distinguishes the experimental sciences from other disciplines and characterizes each of the subjects within Group 4.

It is in this context that all the Diploma Programme Experimental Science courses should aim:

- 1) To provide opportunities for scientific study and creativity within a global context that will stimulate and challenge students
- 2) To provide a body of knowledge, methods and techniques that characterize science and technology
- 3) To enable students to apply and use a body of knowledge, methods and techniques that characterizes science and technology
- 4) To develop an ability to analyse, evaluate and synthesize scientific information
- 5) To engender an awareness of the need for, and the value of, effective collaboration and communication during scientific activities
- 6) To develop experimental and investigative scientific skills
- 7) To develop and apply the students’ information and communication technology skills in the study of science
- 8) To raise awareness of the moral, ethical, social, economic and environmental implications of using science and technology
- 9) To develop an appreciation of the possibilities and limitations associated with science and scientists
- 10) To encourage an understanding of the relationships between scientific disciplines and the nature of the scientific method.

Higher Level HL

Comparison between this course and A Level

Both the IB Physics and the A Level courses cover essentially the same material with a deeper study of some aspects in IB Physics than A2. The range of topics is slightly less in IB than A2. The main difference between the two is in the style of questions. Greater mathematical sophistication is required by IB Physics; calculations are more extended and they often require algebraic skill not needed at A Level. The problem-solving is tougher and mathematical. Formal questions, which rely on algebraic skill as well as on an understanding of the Physics concepts, are common. We therefore believe that a student securing a 6 or better at IB Physics HL is a candidate who would gain an ‘A’ grade in the current A Level.

Since the A Level exam is modular, candidates can target revision on certain topics for certain papers. By virtue of the assessment structure, IBDP candidates cannot do this but must be in command of a wider range of topics in each exam. Having said that, there is some choice of question and there are fewer specifically “synoptic” questions, demanding knowledge from more than one area, on the IB Physics exam. The style of the IBDP course is more traditional and the examination papers reflect this.

In addition, all IBDP students are required to complete a “Group 4” project, during which they collaborate with other scientists from the full range of subjects. Throughout the programme, their personal skills, ability to work independently and awareness of wider ethical aspects of the subject are assessed. Both IB Physics and A Level assess practical skills through coursework submitted for external moderation. The students complete several activities over the course which they write up formally. There is no practical exam.

Higher Core Content: Physics and physical measurement; Mechanics; Thermal physics; Oscillations and waves; Electric currents; Fields and forces; Atomic and Nuclear Physics; Energy, power and climate change; Motion in fields; Thermal physics; Wave phenomena; Electromagnetic induction; Quantum physics and nuclear physics; Digital technology.

Option Topics: Relativity; Particle physics.

Internal Assessment: 24% of Practical Work with a minimum requirement of 60 hours.

External Assessment: 76% Examinations

Paper 1: 40 multiple choice questions on the Core and Options (20%)

Paper 2: Structured and extended response questions on the Core and Options (36%)

Paper 3: Structured and extended response questions on two Options (20%)

Standard Level SL

Comparison between this course and A Level

The nature of IB Physics SL is different from AS Level. The IB Physics SL is often nearly as demanding conceptually as Higher Level, but there is less material. Since the A Level exam is modular, candidates can target revision on certain topics for certain papers. By virtue of the assessment structure, IBDP candidates cannot do this but must be in command of the whole range of the subject in each exam.

All IBDP students are required to complete a "Group 4" project, during which they collaborate with other scientists from the full range of subjects. Throughout the programme, their personal skills, ability to work independently and awareness of wider ethical aspects of the subject are assessed.

Both IB Physics and A Level assess practical skills through coursework submitted for external moderation. The students complete several activities over the course which are written up formally. There is no practical exam.

Standard Core Content: Physics and physical measurement; Mechanics; Thermal physics; Oscillations and waves; Electric currents; Fields and forces; Atomic and Nuclear Physics; Energy, power and climate change.

Option Topics: Quantum physics and nuclear physics; Relativity and particle physics

Internal Assessment: 24% of Practical Work with a minimum requirement of 40 hours.

External Assessment: 76% Examinations.

Paper 1: 30 multiple choice questions on the Core (20%)

Paper 2: Structured and extended response questions on the Core (32%)

Paper 3: Structured and extended response questions on two option topics (24%)

Group 5: Mathematics

Course Overview: IB Mathematics can be studied at Standard and Higher Level.

The IB specification focuses on how mathematics enters our lives daily in a number of ways: for example, we purchase items, consult a timetable or read a newspaper. Mathematics will also extend into our chosen profession: artists need to learn about perspective, economists need to recognise trends in financial dealings and engineers need to take into account stress patterns in physical materials. Scientists view mathematics as a language that is central to our understanding of events that occur in the natural world. Some people enjoy the challenges offered by the logical methods of mathematics and the adventure in reason that mathematical proof has to offer whilst others appreciate mathematics as an aesthetic experience.

Individual students have different needs, interests and abilities. Leighton Park School offers three Mathematics IB courses – Mathematical Studies (for students who do not anticipate needing mathematics in their future studies) and Mathematics SL and HL (for students who want a strong mathematical background).

Students who intend to apply to university abroad or wish to pursue a degree course in the UK with a very high mathematical content should check the precise IB Mathematics entry requirements before making their decision.

Mathematics SL is designed for those students who are confident about applying GCSE techniques correctly (an A grade at GCSE is advised). Any student who is good at and enjoys mathematics will benefit from the SL course. It covers the development of mathematical techniques from an applications rather than theoretical perspective. The syllabus content includes: Using a Graphic Display Calculator; Matrices; Algebra; Vectors; Functions and equations; Statistics and Probability; Circular Functions and Trigonometry; and Calculus.

Mathematics HL is very demanding and aimed at those who have exhibited a high level of competence in Mathematics (an A* at GCSE is advised). It is more difficult than A Level Mathematics and is therefore best suited to those who enjoy the subject and the challenge of difficult problems and those who aim to study Mathematics, Physics or Engineering at University. One of the following topics from: Statistics and Probability; Sets, Relations and Groups; Series and Differential Equations and Discrete Mathematics will be studied for the Paper 3 option.

Assessment

Assessment is by calculator and non-calculator examinations and Coursework. The coursework portfolio comprises of two pieces of work based on different areas of the syllabus. One task is a mathematical investigation, the other involves mathematical modelling.

Skills gained on this course

- Ability to select, use and apply mathematical facts, strategies and techniques in a variety of contexts and problem-solving situations
- Formulation of mathematical arguments and ability to communicate them clearly
- Ability to use standard mathematical models to represent situations in the real world and interpret the results
- How to effectively use graphic calculator technology as a mathematical tool.

Beyond IB

Mathematics develops students' analytical skills and is appropriate to a wide range of careers and science-based courses at Higher Education level and is held in universally high regard. Particularly relevant careers include Accountancy and Banking, Computing, Engineering, Architecture and Business.

Group 5: Mathematical Studies (SL)

Course Overview

The Mathematical Studies course is designed to build confidence and encourage an appreciation in students who do not anticipate a need for mathematics in their future studies, or whose main interests lie outside the field of mathematics. It is designed to be accessible to weaker mathematicians although it still requires commitment and builds on the fundamental skills and knowledge acquired at GCSE. The syllabus content emphasises the application of Mathematics to real-life situations. Topics include Using a Graphic Display Calculator; Geometry and Trigonometry; Number and Algebra; Statistics; Sets, Logic and Probability; Introductory Differential Calculus; Functions and Financial Mathematics.

Assessment

Assessment is by examinations and an individual piece of coursework on a mathematical topic of the student's own choice. The project involves the collection of information or the generation of measurements, and the analysis and evaluation of this data.

Skills gained on this course

- Ability to select, use and apply mathematical facts, strategies and techniques in a variety of contexts and problem-solving situations
- Formulation of mathematical arguments and ability to communicate them clearly
- Ability to use standard mathematical models to represent situations in the real world and interpret the results
- How to effectively use graphic calculator technology as a mathematical tool.

Beyond IB

Mathematical Studies is useful as part of any application for further studies as it shows continued use of mathematical concepts and skills beyond GCSE and develops logical thought processes.

Group 6: Visual Arts

Course Overview

The IB Visual Arts course enables students to engage in both practical exploration and artistic production, and in independent contextual, visual and critical investigation. Students will develop an understanding of visual arts from local, national and international perspective. They will study international artists and movements and art from different cultures and build confidence in responding visually and creatively to personal and cultural experiences. Students will develop and present independent ideas and practice and be able to explain the connections between these and the work of others. They will explore and develop their own ideas and techniques for studio work and produce personally relevant works of art that reflect cultural and historical awareness.

Students choose between:

Option A is designed for students who wish to concentrate on studio practice in visual arts.

Option B is designed for students who wish to concentrate on contextual, visual and critical investigation in visual arts.

| | |
|--|--|
| <p><i>Higher Level (240 hours)</i></p> <p>Option A (HLA) Studio work (60%) Investigative workbook (40%) or Option B (HLB) Investigative workbook (60%)</p> | <p>Standard Level (150 hours)</p> <p>Option A (SLA) Studio work (60%) Investigative workbook (40%) or Option B (SLB) Investigative workbook (60%) Studio work (40%)</p> |
|--|--|

During the course students will have the opportunity to develop their ideas and skills across a wide range of media and to specialise in certain areas. An evolving portfolio of work supported with sketchbooks and journals are presented for assessment and exhibition and may include some of the following areas:

| | |
|--------------------------|---|
| Fine Art | Drawing, painting, sculpture, printmaking, photography, film, video or television |
| Graphics | Communication, computer graphics, illustration, web design, advertising, film, video or television |
| Three-Dimensional Design | Ceramics, sculpture, theatre, jewellery, exhibition design, interior, product or environmental design |
| Photography | Portraiture, documentary, photojournalism, environmental photography, still life or experimental imagery in digital or 35 mm format |

Assessment in visual arts consists of evaluation of work as a whole - both the finished products and the processes of investigation and development. The component contributing the larger portion to the total assessment is externally assessed: for **Option A** this is *studio work*; for **Option B** it is the *Investigation Sketchbook*, which is a sketchbook exploring ideas related to coursework; a notebook record of research of other artists and designers and a journal/diary recording the development of studio-based work.

Skills gained on this course

- Skills and techniques of investigation in a visual and written format
- Confidence and expertise in the use of various media
- An ability to relate art to cultural and historical contexts
- Develop your organisational and display skills through exhibition and presentations
- Extend connections between ideas and practice through art concepts, art elements and design

Beyond IB

A one-year Art Foundation course is usually the preferred and most beneficial route to a chosen Arts Degree subject. Former students have successfully become fashion, graphic, interior and product designers; painters, printers and sculptors; paparazzi and studio photographers; filmmakers and animators; set designers, ceramicists, architects and gallery curators.

Group 6: Theatre

Course Overview

The IB Theatre programme aims to help students understand the nature of the theatre; to understand it by making it as well as studying it; to understand it not only with their minds but with their senses, their bodies and their emotions; to understand the form it takes in cultures other than their own; and through this understanding better to understand themselves, their society and their world.

There are three elements to the course: Theatre in the Making, Theatre in Performance and Theatre in the World and as part of these students will explore all aspects of Theatre Production – from ensemble and performance work, to set and costume design and arts administration.

Students will analyse texts and ideas through practical workshops. They will continually practice the skills required to create their own theatre events, working as writers, directors, actors and designers. They will be involved in performances that will take place on a variety of scale. Scene work will be performed in class, longer pieces will be performed in the studio to audiences of 30-50 and all students will participate in school public productions to audiences of 350. Performance is a vital area of the course but students will also be encouraged to reflect on their and others achievements by means of the working journal and research assignments.

Practitioners to be studied include Shakespeare; Lorca; Artaud; Miller; Stanislavski and Peter Brook.

Assessment

Assessment is comprised of four parts. Students write a Research Investigation with supporting visuals, produce a written Practical Performance Proposal (HL students also produce a rationale for the performance). Students also produce an oral presentation on Theatre Performance and Production and a written investigation and reflection as an Independent Project.

Skills gained on this course

- Ability to demonstrate a theoretical and practical knowledge of theatrical traditions from more than one culture
- Ability to critically evaluate a range of diverse performances, demonstrating an understanding of the complex processes of performance, from its initial conception to the impact the final result leaves on spectators
- Ability to reflect on their own development in theatre through continual self-evaluation and recording
- Ability to interpret playtexts and other types of performance texts analytically and imaginatively
- Initiative and perseverance in both individual and group projects
- Evaluation of the relevance of selected research sources to personal practice.
- Development of personal skills in Acting, Directing and Designing.

Beyond IB

The skills acquired on this course are infinitely transferable into the world of work and are eminently suitable for academic progression. Universities are increasingly keen for students to have experience of Theatre as a qualification for entry to many courses. The course is an ideal base from which to pursue careers in the Theatre and performing arts.