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A: The IB Curriculum at OBS

OBS mission statement and aims

Vision
The Oporto British School is committed to achieving excellence for all

Mission
As the oldest British School in Continental Europe, the Oporto British School is committed to providing a high quality international education for its pupils

Ethos
To Strive for Success and To Serve

IB Diploma Programme overview

The International Baccalaureate Diploma Programme is taught over two years and is recognised throughout the world as a pre-university course by all leading universities in Portugal and internationally. In order to obtain the IB Diploma, a student is required to study 6 subjects. In general, three courses are taken at the Higher Level (HL) and three at the Standard Level (SL). Additionally, all students follow a common course in the Theory of Knowledge and write an Extended Essay (personal research) of 4000 words. The aim of the International Baccalaureate is to combine a liberal education in a range of disciplines with the opportunity to study a limited number of subjects in depth.

All IB courses have work externally assessed by examination and internally assessed work that is externally moderated. The proportion of the final grade determined by internally assessed coursework and final examination varies amongst subjects.

The IB Learner profile

The IB learner profile is the IB mission statement translated into a set of learning outcomes for the 21st century.

The learner profile provides a long-term vision of education. It is a set of ideals that can inspire, motivate and focus the work of schools, teachers and pupils, uniting them in a common purpose.
IB Diploma Programme Subject Areas

Each Diploma Programme (DP) student will choose among the following subjects

- One subject from each of the Groups 1-5
- A sixth subject from Group 6 or an additional subject from the other Groups.

Group 1: Studies in Language or Literature
Group 2: Language Acquisition
Group 3: Individuals and Societies
Group 4: Sciences
Group 5: Mathematics
Group 6: The Arts

In addition to these academic disciplines, the IBDP is founded on three core components for which the students are required to:

1. Complete a 4000 word Research Essay.
2. Undertake a two year course of study in the Theory of Knowledge (TOK).
3. Commit to a range of Creative, Action, and Service (CAS) oriented endeavours.
IB Diploma Program Courses Offered 2015-2017

Subject Group 1: Studies in Language or Literature

Language A: Literature (English) HL SL
Language A: Language and Literature (English or Portuguese) HL SL
Language A: self taught - SL

Subject Group 2: Language Acquisition OR a second Language A

French B HL SL
Spanish B HL SL
Spanish ab initio - SL
French ab initio - SL

Subject Group 3: Individuals and Societies

Business Management HL SL
Economics HL SL
Geography HL SL
History HL SL
Information Technology in a Global Society HL SL

Subject Group 4: Sciences

Physics HL SL
Chemistry HL SL
Biology HL SL
Environmental Systems and Societies - SL

Subject Group 5: Mathematics

Mathematics HL -
Mathematics - SL
Mathematical Studies - SL

Subject group 6: The Arts

Visual Arts HL SL

All these courses will be offered provided there is sufficient demand to ensure viable class sizes. The final offers of all subjects, with the possibility of added subjects, will be posted later, based on student preferences.

Please note that school life does not take place only in the classroom. On the contrary, students will be involved in all sorts of activities and services, where they will learn new skills, and meet people from outside the school. The school works hard to integrate into the broader community.
Recommended Entry requirements for IB Diploma

Due to the course content the following recommendations are made regarding entrance into some subjects at different levels:

- A* at IGCSE is recommended for HL mathematics
- B or higher at IGCSE is recommended for SL mathematics
- B or higher at IGCSE is recommended to take Biology, Chemistry or Physics at HL.
- C or higher at IGCSE is recommended to take Language A subjects.

Assessment

IB Subjects are graded on a scale of 1 (minimum) to 7 (maximum). The students may gain up to another 3 points through the Theory of Knowledge and Extended Essay. The maximum number of points awarded for the IB Diploma is 45.

The following are the failing conditions of the IBDP:

1. CAS requirements have not been met.
2. Candidate’s total points are fewer than 24.
3. An N has been given for theory of knowledge, extended essay or for a contributing subject.
4. A grade E has been awarded for one or both of theory of knowledge and the extended essay.
5. There is a grade 1 awarded in a subject/level.
6. Grade 2 has been awarded three or more times (HL or SL).
7. Grade 3 or below has been awarded four or more times (HL or SL).
8. Candidate has gained fewer than 12 points on HL subjects (for candidates who register for four HL subjects, the three highest grades count).
9. Candidate has gained fewer than 9 points on SL subjects (candidates who register for two SL subjects must gain at least 5 points at SL).

IB Certificate programme overview

IB subjects can also be taken on an individual basis and will be certified accordingly. It is possible to enter UK Universities with IB certificate subjects which consists of 3, 4 or 5 IB subjects selected at any level.

Completion of certificates means students do not have to complete all elements of the core (the extended essay, Theory of Knowledge or CAS) however, any element they do take would be rewarded by universities when applying through UCAS.

Certificates are not recognised in Portugal.
B: Subject area descriptions

GROUP ONE: LANGUAGES A

These courses are designed for native speakers or students who have experience of using the language of the course in an academic context. The languages offered at the OBS at this level are English and Portuguese. The skills developed play a major part in supporting study across the IBDP curriculum.

- **Language A: Literature** in which the focus is directed towards the study of a wide range of literature, developing an understanding of the techniques involved in literary criticism and promoting the ability to form independent literary judgments.

- **Language A: Language and Literature** in which the focus is directed towards the study of a range of literary and non-literary texts, developing and understanding the constructed nature of meanings generated by language and the function of context in this process.

Both courses involve a range of learning techniques, such as: individual or group investigation and analysis; note taking; the leading of discussion; the sharing and explaining of research undertaken. In addition to the development of higher order critical thinking skills, there is an increased emphasis on written and oral communication skills. The oral work will include critical analysis and various forms of presentation to an audience. Students produce regular essays and written tasks to improve and prepare for examinations, to develop understanding and improve powers of written expression.

**GROUP ONE AIMS**

The aims of Language A: Literature and Language A: Language and Literature:

1. Introduce students to a range of texts from different periods, styles and genres.
2. Develop in students the ability to engage in close, detailed analysis of individual texts and make relevant connections.
3. Develop the students’ powers of expression, both in oral and written communication.
4. Encourage students to recognize the importance of the contexts in which texts are written and received.
5. Encourage, through the study of texts, an appreciation of the different perspectives of people from other cultures, and how these perspectives construct meaning.
6. Encourage students to appreciate the formal, stylistic and aesthetic qualities of texts.
7. Promote in students an enjoyment of, and lifelong interest in, language and literature.

The additional aims of the Language A: Language and Literature course are to:

8. Develop in students an understanding of how language, culture and context determine the ways in which meaning is constructed in texts.
9. Encourage students to think critically about the different interactions between text, audience and purpose.
**LANGUAGE A: LITERATURE**

Language A: literature develops understanding of a variety of literary texts and the techniques involved in literary criticism and promoting the ability to form independent literary judgments.

It is a flexible and dynamic course that allows teachers to choose a variety of literary works from prescribed book lists covering different styles, era and regions of the World allowing the construction of a course that suits the particular needs and interests of the students. It may include topics such as the study of Literature and Film or creative writing in addition to more conventional literary study.

**SYLLABUS AND ASSESSMENT**

<table>
<thead>
<tr>
<th>Syllabus</th>
<th>SL (10 literary works)</th>
<th>HL (13 literary works)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 1</td>
<td>A literary study of two works in translation.</td>
<td>A literary study of three works in translation.</td>
</tr>
<tr>
<td>Works in Translation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part 2</td>
<td>Close study and analysis of two works, each of a different genre.</td>
<td>Close study and analysis of two works, each of a different genre.</td>
</tr>
<tr>
<td>Detailed Study</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part 3</td>
<td>Literary study of three works of the same literary genre.</td>
<td>Literary study of four works of the same literary genre.</td>
</tr>
<tr>
<td>Literary Genres</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part 4</td>
<td>Three works are chosen by the school.</td>
<td>Three works are chosen by the school.</td>
</tr>
<tr>
<td>Options</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The approach to the study of works can come in a variety of ways, for example Literature and film or Literature and creative writing.

<table>
<thead>
<tr>
<th>External Assessment</th>
<th>SL (10 literary works)</th>
<th>HL (13 literary works)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper 1</td>
<td>1 hour 30 minutes</td>
<td>1 hour 30 minutes</td>
</tr>
<tr>
<td>Literary Analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper 2</td>
<td>1 hour 30 minutes</td>
<td>2 hours</td>
</tr>
<tr>
<td>Literary Essay</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Written Assignment</td>
<td>1,200 - 1,500 words</td>
<td>1,200 - 1,500 words</td>
</tr>
<tr>
<td>Coursework</td>
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</table>

<table>
<thead>
<tr>
<th>Internal Assessment</th>
<th>SL (10 literary works)</th>
<th>HL (13 literary works)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Commentary</td>
<td>10 minutes: literary commentary</td>
<td>10 minutes: literary commentary based on poetry, followed by a 10-minute interview on one other.</td>
</tr>
<tr>
<td>Oral Presentation</td>
<td>10 - 15 minutes: individual presentation</td>
<td>10 - 15 minutes: individual presentation</td>
</tr>
</tbody>
</table>
LANGUAGE A: LANGUAGE AND LITERATURE

Language A: language and literature is a new course, introduced into Group 1 to provide greater choice and with a particular focus on developing an understanding of the constructed nature of meanings generated by language. Two parts of the course relate to the study of language and two to the study of literature.

The language A: language and literature course develops skills of textual analysis. A study of the formal structures of a text is combined with an exploration of the way the use of formal elements and our understanding of their meaning is affected by reading practices that are culturally defined.

SYLLABUS AND ASSESSMENT

<table>
<thead>
<tr>
<th>Syllabus</th>
<th>SL</th>
<th>HL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 1</td>
<td><strong>Language in Cultural Texts</strong></td>
<td><strong>Language in Cultural Texts</strong></td>
</tr>
<tr>
<td><strong>Part 2</strong></td>
<td><strong>Language and Mass Communication</strong></td>
<td><strong>Language and Mass Communication</strong></td>
</tr>
<tr>
<td><strong>Part 3</strong></td>
<td><strong>Two literary works, one of which is a work in translation.</strong></td>
<td><strong>Two literary works, one of which is a work in translation.</strong></td>
</tr>
<tr>
<td><strong>Part 4</strong></td>
<td><strong>Two literary works, each chosen from the prescribed book list (PBL) for the language studied.</strong></td>
<td><strong>Three literary works, all of which are chosen from the prescribed book list (PBL) for the language studied.</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>External Assessment</th>
<th>SL</th>
<th>HL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper 1</td>
<td>1 hour 30 minutes: analysis of one of two unseen texts.</td>
<td>2 hours: comparative analysis of two unseen texts.</td>
</tr>
<tr>
<td>Textual Analysis</td>
<td>1 hour 30 minutes</td>
<td>2 hours</td>
</tr>
<tr>
<td>Paper 2</td>
<td>1 hour 30 minutes</td>
<td>2 hours</td>
</tr>
<tr>
<td>Literary Essay</td>
<td>One written task, 800 - 1,000 words</td>
<td>Two coursework tasks: each 800 - 1,000 words</td>
</tr>
<tr>
<td>Written Task</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
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<tr>
<th>Internal Assessment</th>
<th>HL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Oral Commentary</td>
<td>15 minutes: literary commentary</td>
</tr>
<tr>
<td>Further Oral Activity</td>
<td>Group or class oral activity; individually assessed</td>
</tr>
</tbody>
</table>

CAREER AND DEGREE OPPORTUNITIES Language A courses are a frequent requirement at university across a range of disciplines. It is particularly useful in areas such as humanities, further literature, journalism, media studies, graphic design and the arts. The critical and communication skills developed are widely applicable in career and further educational situations.
GROUP TWO: LANGUAGES B

Language B is an additional language-learning course designed for students with some previous learning of that language. It may be studied at either SL or HL. The main focus of the course is on language acquisition and development of language skills. These language skills should be developed through the study and use of a range of written and spoken material. Such material will extend from everyday oral exchanges to literary texts, and should be related to the cultures concerned.

DISTINCTION BETWEEN SL AND HL

Portuguese, Spanish and French B subjects are available at SL and HL. The courses give students the possibility of reaching a high degree of competence in an additional language while exploring the cultures where that language is spoken. The courses aim to develop the students’ linguistic competence and intercultural understanding.

PRIOR LEARNING

Many factors determine the group 2 course that a student should take: the student’s best second language, and any previous knowledge of the language of study. The most important consideration is that the language B course should be a challenging educational experience for the student.

SYLLABUS OUTLINE
LANGUAGES Ab Initio

Language *ab Initio* is an additional language-learning course designed for students with no experience of the language. It is studied only at SL. The main focus of the course is on language acquisition and development of language skills.

THEMES

- Individual and Society
- Leisure and Work
- Urban and Rural environment

The 3 themes (Individual and Society, Leisure and Work, Urban and Rural Environment) are made up of a series of 20 topics. These serve as the foundation for the acquisition of the language and the study of different text types.

Through the study of the three interrelated themes, students will develop the skills necessary to fulfil the assessment objectives of the Language Ab Initio course. Intercultural understanding provides the link between the three areas.
GROUP THREE: INDIVIDUALS AND SOCIETIES

BUSINESS MANAGEMENT

Business management studies business functions, management processes and decision-making in contemporary contexts of strategic uncertainty. It examines how business decisions are influenced by factors internal and external to an organization, and how these decisions impact upon its stakeholders, both internally and externally. Business management also explores how individuals and groups interact within an organization, how they may be successfully managed and how they can ethically optimize the use of resources in a world with increasing scarcity and concern for sustainability. Business management is the study of decision-making within an organization, whereas economics is the study of scarcity and resource allocation, both on micro and macro levels.

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

Emphasis 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 holistic overview of business management. Through the exploration of six concepts underpinning the subject (change, culture, ethics, globalization, innovation and strategy), the business management course allows students to develop their understanding of interdisciplinary concepts from a business management perspective.

SYLLABUS OUTLINE

Modules:
1. Business Organisation and Environment
2. Human Resource Management
3. Finance and Accounts
4. Marketing
5. Operations Management

Assessment:

<table>
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<tr>
<th></th>
<th>SL</th>
<th>HL</th>
</tr>
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<tbody>
<tr>
<td>P1</td>
<td>35% (1hr 15)</td>
<td>35% (2hr 15)</td>
</tr>
<tr>
<td>P2</td>
<td>40% (1hr 45)</td>
<td>40% (2hr 15)</td>
</tr>
<tr>
<td>Internal Assessment</td>
<td>25% (Written Commentary)</td>
<td>25% (Research Project)</td>
</tr>
</tbody>
</table>

CAREER AND DEGREE OPPORTUNITIES

The course is ideally suited to students who want to pursue a career in business, management or finance. It is also useful to students looking to pursue other areas as it equips students with knowledge and skills that are vital to those entering the world of work in general.

Some leading UK Universities (LSE and Warwick) have requested Mathematics HL to be studied also at IBDP for an economics course.
ECONOMICS

Economics is a dynamic social science. The study of economics is essentially about the concept of scarcity and the problem of recourse allocation.

Although economics involves the formulation of theory, it is not a purely theoretical subject: economic theories can be applied to real-world examples. Neither is economics a discreet subject, since economics incorporates elements of history, geography, psychology, political studies and many other related fields of study.

Economics must consider how economic theory is to be applied in an international context. Economics has an important role to play in promoting international cooperation and mutual understanding because of its focus on global issues.

The key objectives of the course are so that the student will be expected to:
1. Have an understanding and knowledge of economic concepts and theories
2. Apply economic theory to a range of circumstances and a variety of situations
3. Analyse information through the use of economic concepts and theories
4. Evaluate concepts and theories from different economic perspectives

Assessment:

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<th></th>
<th>SL</th>
<th>HL</th>
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</thead>
<tbody>
<tr>
<td>P1</td>
<td>40% (1hr 30)</td>
<td>30% (1hr 30)</td>
</tr>
<tr>
<td>P2</td>
<td>40% (1hr 30)</td>
<td>30% (1hr 30)</td>
</tr>
<tr>
<td>P3</td>
<td>-</td>
<td>20% (1hr)</td>
</tr>
<tr>
<td>Internal Assessment</td>
<td>20% (Written Commentaries)</td>
<td>20% (Written Commentaries)</td>
</tr>
</tbody>
</table>

SYLLABUS OUTLINE

Higher Level and Standard Level students study the same sections set out below.

Section 1: Microeconomics. Section 2: Macroeconomics. Section 3: International economics. Section 4: Development Economics

HL students take an additional paper based on handling quantitative data. To be a successful economics student you should be a good all rounder, comfortable in English and Maths, and have a genuine interest in current affairs and global issues.

CAREER AND DEGREE OPPORTUNITIES

Economics is a good subject to take if you wish to study economics, business, finance, law, politics and other social sciences like sociology at degree level or if you have a desire to pursue a career in these fields in later life.

Some Universities require Economics HL and Mathematics HL if you wish to study Economics at degree level. These include LSE, Oxbridge, Warwick and Faculdade de Economia da Universidade do Porto. You would be advised, even now, to check whether certain courses in the UK require Mathematics HL to go along with Economics HL.
GEOGRAPHY

Geography is a dynamic subject that is firmly grounded in the real world; it seeks to identify trends and patterns and examines the processes behind them. Geography describes and helps to explain the similarities and differences between spaces and places. These may be defined on a variety of scales and from a range of perspectives.

Within group 3 subjects, Geography is distinctive in that it occupies the middle ground between social sciences and natural sciences, and ensures that students acquire elements of both scientific and socio-economic methodologies. Geography takes advantage of its position between both these groups of subjects to examine relevant concepts and ideas from a wide variety of disciplines. This helps students develop an appreciation of, and a respect for, alternative approaches, viewpoints and ideas.

The Geography course embodies global and international awareness in several distinct ways. It examines key global issues, such as poverty, sustainability and climate change. It considers examples and detailed case studies at a variety of scales, from local to regional, national and international. Inherent in the syllabus is a consideration of different perspectives, economic circumstances and social and cultural diversity.

Geography seeks to develop international understanding and foster a concern for global issues as well as to raise students’ awareness of their own responsibility at a local level. Geography also aims to develop values and attitudes that will help students reach a degree of personal commitment in trying to resolve these issues, appreciating our shared responsibility as citizens of an increasingly interconnected world.

BASIC OUTLINE OF IB GEOGRAPHY

Part 1: Core theme – patterns and change (SL/HL)
There are four compulsory topics in this core theme.

1. Populations in transition
2. Disparities in wealth and development
3. Patterns in environmental quality and sustainability
4. Patterns in resource consumption

Part 2: Optional themes (SL/HL)
Two optional themes are required at SL. Three optional themes are required at HL.

A. Freshwater - issues and conflicts
B. Extreme environments
C. Hazards and disasters - risk assessment and response
D. Leisure, sport and tourism
Part 3: HL extension – global interactions
There are seven compulsory topics in the HL extension.

1. Measuring global interactions
2. Changing space - the shrinking world
3. Economic interactions and flows
4. Environmental change
5. Socio cultural exchanges
6. Political outcomes
7. Global interactions at the local level

FIELDWORK INTERNAL ASSESSMENT (SL/HL)

Fieldwork, leading to one written report (2500 words) based on a fieldwork question, information collection and analysis with evaluation. This component is internally assessed by the teacher and externally moderated by the IB at the end of the course.

CAREER AND DEGREE OPPORTUNITIES

Geography is one of the most versatile subjects to study and can lead to career prospects in Management, Law, Education, City Planning and Government. Many universities consider it as a Science subject and it is useful for Geological Sciences, Journalism, Psychology, Politics and Resource management.
HISTORY

History matters because it seeks to explain the past, an understanding of which is vital if we are to make sense of our present and future. We must not only seek to find out when things happened, but also why they happened. History is not about simply learning accepted “facts”, but challenging accepted ideas and offering possible alternative and personal views.

The aims of IB History are to promote an understanding of history as a discipline, including the nature and diversity of its sources, methods and interpretations; encourage an understanding of the present through critical reflection upon the past; encourage an understanding of the impact of historical developments at national, regional and international levels and to develop an awareness of one’s own historical identity through the study of the historical experiences of different cultures.

BASIC OUTLINE OF IB HISTORY

Students who choose History at Higher Level or Standard Level study the following topics:

1. The Rise and Rule of Single-Party States – a study of the origins, ideology, organisation, nature and impact of totalitarian single-party states. The dictatorships of Hitler, Stalin and Mao Zedong will be compared to consider similarities and differences between regimes.
2. The Causes, Practice and Effects of Wars – a study of conflict in the twentieth century, which includes examples of civil wars, revolutionary wars and guerrilla warfare, in particular World War II, the Spanish Civil War and the Chinese Civil War were studies.

Students who choose History at Higher Level will also study a Regional option. Our Regional option is Europe and the Middle East, and the period is c.1840s – 1940s.

ASSESSMENT

Higher Level – 3 exam papers (80% of final mark) based upon all parts of the course plus an internally marked and externally moderated assessment essay (20%) – 2,000 words, which enables students to choose a topic of historical interest to them.
Standard Level – 2 exam papers (75% of final mark) plus an internally marked and externally moderated piece of coursework (25%) – usually a 2,000 word essay.

CAREER AND DEGREE OPPORTUNITIES

IB History is usually required for students who wish to study History in Higher Education. A History degree, like most other purely academic degrees, can be a pathway into many possible careers. The study of History involves the development of many worthwhile and cross curricular skills; therefore a History degree is often taken as proof of all round ability and as such it can lead into such diverse areas as banking, accountancy, law, teaching, marketing, the media, the Civil Service, the military, industrial administration and information handling/ retrieval. Similarly, IB History can also be regarded as a route into many possible Higher Education courses that are not normally taught at school level.
INFORMATION TECHNOLOGY IN A GLOBAL SOCIETY (ITGS)

The IB Diploma Programme information technology in a global society (ITGS) course is the study and evaluation of the impacts of information technology (IT) on individuals and society. It explores the advantages and disadvantages of the access and use of digitized information at the local and global level. ITGS provides a framework for the student to make informed judgments and decisions about the use of IT within social contexts.

Students come into contact with IT on a daily basis because it is so pervasive in the world in which we live. This increasingly widespread use of IT inevitably raises important questions with regard to the social and ethical considerations that shape our society today. ITGS offers an opportunity for a systematic study of these considerations, whose range is such that they fall outside the scope of any other single discipline.

SYLLABUS OUTLINE
Students at SL and HL in ITGS are presented with a syllabus that has a common core consisting of three strands:
A. Social and Ethical Significance
B. Application to Specified Scenarios
C. IT Systems.

HL students also study the HL extension consisting of two additional topics in the IT systems strand:
A. IT systems in organizations
B. Robotics, artificial intelligence and expert systems.

In addition the HL course has one more externally assessed component that comprises a pre-seen case study based on a fictitious organization; this allows students to research various aspects of the subject, which may include new technical concepts and additional subject content, in greater depth.

ASSESSMENT
Higher Level – 3 exam papers (80% of final mark) based upon all parts of the course plus an internally marked and externally moderated piece of coursework (20%). The coursework is a project which requires the development of an original IT product for a specified client. Students must produce: i) an original IT product and ii) supporting documentation (word limit 2,000 words).

Standard Level – 2 exam papers (70% of final mark) plus an internally marked and externally moderated piece of coursework (30%). The coursework is a project which requires the development of an original IT product for a specified client. Students must produce: i) an original IT product and ii) supporting documentation (word limit 2,000 words).

CAREER AND DEGREE OPPORTUNITIES
This course would benefit any student wishing to further their studies in the field of ICT, however, it will be focusing on the social issues and less emphasis is placed on the technical aspects of ICT. ITGS forms a base for studies in many Social Sciences which use Global Perspectives as an element. These courses can lead to careers in fields as far apart as Politics and Journalism.
IB GROUP 4: EXPERIMENTAL SCIENCES

It is mandatory for IB students to take at least one Group 4 Science subject.

At OBS we offer a choice of four IB Experimental Sciences:
- IB Physics (SL or HL)
- IB Chemistry (SL or HL)
- IB Biology (SL or HL)
- IB Environmental Systems and Societies (SL only)

THE GROUP FOUR PROJECT (G4P)

As part of the scheme of practical work in the Sciences, students in F11 take part in the G4P. This is a one-group activity as the name suggests, taking in all the students of science.

The group brainstorms for ideas, discusses these topics and then decides on one to investigate collectively. The product of such investigations is not assessed. In the past, a group chose “Surfing” as its title and investigated the Physics, Chemistry and Biology of Water Pollution and the Aerodynamics of the board.

Each student spends 10 hours of practical work on the G4P.
PHYSICS

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

Classical Physics is built upon the great pillars of Newtonian mechanics, electromagnetism and thermodynamics which went a long way to deepening our understanding of the universe. From Newtonian mechanics came the idea of predictability in which the universe was deterministic. However, at the end of the nineteenth century classical Physics could not explain experimental discoveries and was eventually replaced with quantum mechanics.

In the IB Physics course both theory and experiments will be undertaken which will complement one another naturally, as they do in the wider scientific community. The Diploma Programme Physics course allows students to develop traditional practical skills and techniques alongside learning new concepts. It also allows students to develop interpersonal skills and information and communication technology skills which are essential in modern scientific endeavour.

As well as gaining an understanding of the natural world, students will gain an understanding of how to change the world through the technological side of Physics. Here Physics principles can be applied to construct and alter the material world to suit our needs. The moral, ethical and social impact of Physics on society will be raised.

The major topics covered are:

- Mechanics – kinematics, linear and circular motion, forces, Newton’s laws, momentum, energy, projectile motion, gravitation.
- Thermal physics – heating and cooling, kinetic theory of gases, thermodynamics.
- Waves – properties of waves, travelling waves, standing waves, interference.
- Electricity and magnetism – current electricity, magnetism, electromagnetic induction.
- Fields and Forces – gravitational, electrical and magnetic fields.
- Atomic and nuclear physics – the atom, radioactivity, nuclear energy,
- Energy, Power and Climate change – energy sources and their environmental effects.

In addition all students will study one option e.g.: astrophysics, relativity, engineering physics and imaging.

ASSESSMENT

Internal – The internal assessment, worth 20% of the final assessment, consists of one scientific investigation.
External – Written papers contribute 80% of the final grade.

CAREER AND DEGREE OPPORTUNITIES

Engineering – aeronautic, civil, electrical, electronics, mechanical, materials, chemical, nuclear etc. Medicine and Pharmacy. Physics also seems a popular requirement for many non-science based disciplines.
CHEMISTRY

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

SYLLABUS OUTLINE

The syllabus consists of a number of compulsory topic areas as well as options. The difference between studying Chemistry at Higher Level and Standard Level (HL or SL) is that at HL more aspects of every topic will be discussed, and in significantly greater depth.

The topic areas are:

| 1: Stoichiometric relationships | Additional higher level (AHL): |
| 2: Atomic structure | 12. Atomic structure |
| 3: Periodicity | 13. The periodic table—the transition metals |
| 4: Chemical bonding and structure | 14. Chemical bonding and structure |
| 5: Energetics/thermochemistry | 15. Energetics/thermochemistry |
| 6: Chemical kinetics | 16. Chemical kinetics |
| 7: Equilibrium | 17. Equilibrium |
| 8: Acids and Bases | 18. Acids and bases |
| 9: Redox processes | 19. Redox processes |
| 10: Organic Chemistry | 20. Organic chemistry |

OPTIONS:
A. Materials
B. Biochemistry
C. Energy
D. Medicinal Chemistry

ASSESSMENT

Practical work is an essential element of the Group Four experimental sciences. HL students are required to spend 60 Hours, and SL students 40 Hours on practical investigative work. They will also spend 10 hours on the inter-disciplinary Group Four Project. Practical work counts for 20% of the overall Chemistry grade.

At the end of the course students are assessed externally by written examination which comprises 3 papers (multiple choice, structured answers and options).

CAREER AND DEGREE OPPORTUNITIES

A background in Chemistry at IB level aids a successful pursuit of a variety of studies, including medicine, dentistry, pharmacy, biological sciences, agriculture, food technology and dietetics, environmental studies, material sciences and physics. To enter certain courses, it may be required that Chemistry be studied in the IBDP.
BIOLOGY

Biology is the study of living organisms. This study is undertaken at a variety of levels from the molecule-land to that of the biosphere, each with distinctive approaches and methods. However, by the end of the course the student should have developed an appreciation of the interactions between these levels and of the organisms and their functions within the biosphere.

The design of Science at IB level seeks to incorporate recent scientific thinking. Curriculum content has been selected with the realisation that because science is continuously and rapidly progressing both in breadth and depth, the contemporary science curriculum can never be considered to be stable.

The new emphasis in IB Biology is to provide students with ample opportunities to go beyond the Understanding of concepts to include areas such as:

- Nature of Science
- Theory of Knowledge
- International Mindedness
- Cross-Curricular Links
- Application and Skills (including ICT)

BASIC OUTLINE OF BIOLOGY

Students who choose Biology at Standard Level carry out 40 hours of practical work and study the following topics:

- Topic 1 Cell Biology
- Topic 2 Molecular Biology
- Topic 3 Genetics
- Topic 4 Ecology
- Topic 5 Evolution and biodiversity
- Topic 6 Human Physiology

Students who choose Higher Level Biology carry out 60 hours of practical work and study all of the core topics in more detail.

In addition, they study:

- Topic 7 Nucleic Acids
- Topic 8 Metabolism, Cell Respiration and Photosynthesis
- Topic 9 Plant biology
- Topic 10 Genetics
- Topic 11 Animal Physiology

OPTIONS (students study ONE option from the list):

- Option A Neurophysiology and Behaviour
- Option BBiotechnology and Informatics
- Option C Ecology and Conservation
- Option D Human Physiology
ASSESSMENT

Internal - Practical work is assessed from one final individual investigation worth 20% of the final grade including 10 hrs of individual practical work.
External - written papers contribute towards 80% of the final grade.

CAREER AND DEGREE OPPORTUNITIES

The breadth of biological sciences is reflected in the range of jobs available in these subjects; agriculture, applied biology, biochemistry, bimolecular science, biophysics, botany, cell biology, environmental biology, marine biology, sports science, social biology, zoology just to mention a few. Opportunities are available in work related to medicine, as well as in many other areas such as with food, agriculture and water. Major employers include universities, hospitals, government laboratories and industry. Some biologists use their subject outside a laboratory in work such as medical sales, or in the production of pharmaceuticals or foodstuffs. Some areas of biology, e.g. conservation, ecology and wildlife are highly attractive careers where ability, determination and willingness are needed. Biology develops intellectual and personal skills which can be used in a wide variety of work as diverse as finance, computing, retailing and the armed services.
ENVIRONMENTAL SYSTEMS AND SOCIETIES

Environmental Systems and Societies is the study of the environment from both a scientific and geographical basis. By the end of the course, students will have developed a good understanding of environmental issues from an ethical and political perspective as well as a theoretical one. This will be applied locally as well as globally.

As with the other science courses at IB, Environmental Systems and Societies incorporates recent Scientific thinking and as a result the curriculum offers ample opportunities for research and discovery.

BASIC OUTLINE OF THE COURSE

The course can only be studied at standard Level including:
Topic 1 System and Models
Topic 2 The Ecosystem
Topic 3 Human Population, carrying capacity and resource use
Topic 4 Conservation and Biodiversity
Topic 5 Pollution Management
Topic 6 The Issue of Global Warming
Topic 7 Environmental Value Systems

ASSESSMENT

Internal – practical work is assessed regularly, accounting for 20% of the final grade, including a residential field trip to Spain. This includes 10 hours allocated to the Group Four Project in which all the science students participate.
External – written papers contribute towards 80% of the final grade.

CAREER AND DEGREE OPPORTUNITIES

The breadth of this course opens up a wide range of possibilities in agriculture, environmental sciences and marine biology, earth sciences, geology, ecology, forestry, conservation and wildlife.
GROUP FIVE: MATHEMATICS

“There is no doubt that to some degree everyone is a mathematician. Everyone does mathematics on a regular basis as part of their everyday life, during such activities as buying produce in the market, consulting a timetable, reading a newspaper and timing a process. From this vast population there is a group who use mathematics to a greater degree and apply their knowledge to scientific tasks, for example: engineers, laboratory technicians and economists. Further there is the smaller group of people who are professional mathematicians involved with such projects as space research, statistical surveys and pure research. Thus it is clear that an exhaustive variety of mathematical experiences are available and these opportunities should not be missed.” – IB General Guide Handbook

BASIC OUTLINE OF IB MATHEMATICS

There are 3 Mathematics courses available at the OBS:

1. Mathematics Studies Standard Level – this course is geared to students from a non-mathematical background and a level of difficulty akin to IGCSE Extended level, with emphasis placed on real life situations. The level of difficulty is not sufficient for students requiring Mathematics for the pursuit of further qualifications, although introductory calculus is now a compulsory element of the course.

2. Mathematics Standard Level – this is a more demanding level requiring solid background knowledge (IGCSE grade B or above).

3. Mathematics Higher Level – students at this level are expected to be both competent and interested in Mathematics and who are able to meet the challenges of studying at a more advanced level (IGCSE grade A/ A*).

ASSESSMENT

Standard Levels – two written papers (80% of the final mark) and a project/ exploration (20% of the final mark).

Higher Level – three written papers (80% of the final mark) and an exploration (20% of the final mark).

CAREER AND DEGREE OPPORTUNITIES

In most types of employment, staff are expected to demonstrate some degree of mathematical ability and any post 16-study of the subject will enhance this. Mathematics Standard Level provides a sound basis for students planning to pursue employment in such fields as Chemistry, Medicine and Business Administration; and is recommended for students studying HL Physics. Higher Level is a prerequisite for many university courses in Engineering, Physics, Technology courses and Economics, particularly at universities where places are in high demand.
GROUP SIX: THE ARTS

The visual arts are an integral part of everyday life, permeating all levels of human creativity, expression, communication and understanding. The IB Diploma Programme visual arts course encourages students to challenge their own creative and cultural expectations and boundaries. It is a thought-provoking course in which students develop analytical skills in problem-solving and divergent thinking, while working towards technical proficiency and confidence as art-makers. In addition to exploring and comparing visual arts from different perspectives and in different contexts, students are expected to engage in, experiment with and critically reflect upon a wide range of contemporary practices and media. The course is designed for students who want to go on to study visual arts in higher education as well as for those who are seeking lifelong enrichment through visual arts. Supporting the International Baccalaureate mission statement and learner profile, the course encourages students to actively explore the visual arts within and across a variety of local, regional, national, international and intercultural contexts. Through inquiry, investigation, reflection and creative application, visual arts students develop an appreciation for the expressive and aesthetic diversity in the world around them, becoming critically informed makers and consumers of visual culture.

LEARNING OUTCOMES

Throughout the course, teachers should help students to:
- develop the skills and techniques of investigation—both visual and written
- relate art to its cultural and historical contexts
- explore art concepts
- explore art elements
- develop and use the processes of art criticism and analysis
- develop confidence and expertise in the use of various media
- extend their knowledge of design
- share their work with an audience through displays and exhibitions or presentations
- extend individual investigation to inform practical work
- make connections between ideas and practice—both their own and others’.

SYLLABUS OUTLINE

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<tr>
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<th>SL and HL</th>
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<tbody>
<tr>
<td>External Assessment</td>
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<tr>
<td>Comparative Study</td>
<td>20%</td>
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<tr>
<td>Process Portfolio</td>
<td>40%</td>
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<tr>
<td>Internal Assessment</td>
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<tr>
<td>Exhibition</td>
<td>40%</td>
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The visual arts syllabus demonstrates a clear distinction between the course at SL and at HL, with additional assessment requirements at HL that allow for breadth and greater depth in the teaching and learning.
C: Core IB Diploma Requirements

Extended Essay (please also refer to the IB Booklet)

The extended essay is an in-depth study of a focused topic chosen from the list of approved Diploma Programme subjects—normally one of the student’s six chosen subjects for the IB diploma. It is intended to promote high-level research and writing skills, intellectual discovery and creativity. It provides students with an opportunity to engage in personal research in a topic of their own choice, under the guidance of a supervisor (a teacher in the school). This leads to a major piece of formally presented, structured writing, in which ideas and findings are communicated in a reasoned and coherent manner, appropriate to the subject chosen. It is recommended that completion of the written essay is followed by a short, concluding interview, or viva voce, with the supervisor.

The extended essay is assessed against common criteria, interpreted in ways appropriate to each subject.

The extended essay is:
• compulsory for all Diploma Programme students
• externally assessed and, in combination with the grade for theory of knowledge, contributes up to three points to the total score for the IB diploma
• a piece of independent research/investigation on a topic chosen by the student in cooperation with a supervisor in the school
• chosen from the list of approved Diploma Programme subjects, published in the Handbook of procedures for the Diploma Programme
• presented as a formal piece of scholarship containing no more than 4,000 words
• the result of approximately 40 hours of work by the student
• concluded with a short interview, or viva voce, with the supervising teacher (recommended).

In the Diploma Programme, the extended essay is the prime example of a piece of work where the student has the opportunity to show knowledge, understanding and enthusiasm about a topic of his or her choice. In those countries where it is the norm for interviews to be required prior to acceptance for employment or for place at university, the extended essay has often proved to be a valuable stimulus for discussion.

Theory of Knowledge (TOK) (please also refer to the IB Booklet)

TOK is a course about critical thinking and inquiring into the process of knowing, rather than about learning a specific body of knowledge. It is a core element which all Diploma Programme students undertake and to which all schools are required to devote at least 100 hours of class time. TOK and the Diploma Programme subjects should support each other in the sense that they reference each other and share some common goals. The TOK course examines how we know what we claim to know. It does this by encouraging students to analyse knowledge claims and explore knowledge questions. A knowledge claim is the assertion that “I/we know X” or “I/we know how to Y”, or a statement about knowledge; a knowledge question is an open question about knowledge.
Assessment:

There are two assessment tasks in the TOK course: an essay and a presentation. The essay is externally assessed by the IB, and must be on any one of the six prescribed titles issued by the IB for each examination session. The maximum word limit for the essay is 1,600 words.

The presentation can be done individually or in a group, with a maximum group size of three. Approximately 10 minutes per presenter should be allowed, up to a maximum of approximately 30 minutes per group.

Points from the Core

Students achieve a maximum of three points from TOK and the EE. These points are awarded as shown in the matrix below.

Creativity, Action and Service (CAS) (please also refer the IB Booklet)

As a result of their CAS experience as a whole, including their reflections, there should be evidence that students have met the following 8 learning outcomes:

- increased their awareness of their own strengths and areas for growth
- undertaken new challenges
- planned and initiated activities
- worked collaboratively with others
- shown perseverance and commitment in their activities
- engaged with issues of global importance
- considered the ethical implications of their actions
- developed new skills

As with new challenges, new skills may be shown in activities that the student has not previously undertaken, or in increased expertise in an established area.
All eight outcomes must be present for a student to complete the CAS requirement. Some may be demonstrated many times, in a variety of activities, but completion requires only that there is some evidence for every outcome.

This focus on learning outcomes emphasizes that it is the quality of a CAS activity (its contribution to the student’s development) that is of most importance. The guideline for the minimum amount of CAS activity is approximately the equivalent of half a day per school week (three to four hours per week), or approximately 150 hours in total, with a reasonable balance between creativity, action and service. “Hour counting”, however, is not encouraged.

**D: Student Support**

Students are supported by tutors, teachers, the IB Coordinator, the Head of Secondary and the Headmaster. Students will be placed in tutor groups assigned at the beginning of the year. In these tutor groups they will have tutorial lessons once a week where Diploma Programme matters are addressed. Students will get support from their tutors throughout the two years on the IBDP, this includes careers advice, information and guidance including applications through UCAS to the UK, to Portugal and other countries.

UCAS.com provides detailed course information for each further education institution in the UK with relevant entrance requirements. Students have been shown how to use this website. Tutors and teachers can provide general guidance on subject selection but for requirements to specific institutions parents and students should check entrance requirements individually with each institution.

**E: Other IB Diploma Matters**

**Academic honesty**

Students will exercise academic honesty in all aspects of their work and will receive sessions on this in tutorial.

They will acknowledge the work of others, including material taken from other sources. They will not claim as their own the work of others. They will not give their work to others to pass off as their own. They will observe the integrity of the examination room.

**IA deadlines**

A calendar of deadlines will be published at the start of the academic year outlining all Internal Assessment coursework deadlines when work must be submitted. It is important that all students keep to these deadlines.

**A non-regular diploma**

If the conditions of entry into an institution of higher education require a candidate to offer a choice of subjects different from that specified in the regulations for the Diploma Programme, the candidate may be allowed to make a reasonable substitution
on presentation to the IB of the appropriate documentary evidence. This evidence, which may take the form of pages from a university prospectus, must be submitted in support of all requests.

A candidate will generally be authorized to take a non-regular diploma only if the proposed higher education course allows no other alternative. The possibility of offering a subject as an additional seventh subject (that does not contribute to the diploma) must be considered before submitting a request for a non-regular diploma and is advised up to the approval of the request. In no circumstances will a candidate be exempt from taking a group 1 and a group 2 subject.