



CHARTERHOUSE

Sixth Form Courses for
September 2024

A Guide for Pupils and Parents

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The Sixth Form Curriculum

The Sixth Form curriculum at Charterhouse is exciting, academically rigorous and intellectually stimulating. It provides pupils entering the Sixth Form a choice of pathways. We offer a comprehensive breadth of subjects for those pursuing the A Level route and are also an IB World School, offering the International Baccalaureate which requires the study of six different subject areas alongside a common core.

Formal, public examinations for all academic subjects will take place in the Summer Term of 2024, i.e. at the end of the two-year course. All pupils who join the Sixth Form at Charterhouse in September 2022 will pursue one of the following routes:

1. The study of three A Levels, the Extended Project Qualification and an Elective

Universities traditionally make offers to pupils based on three A Levels, and the majority of our pupils will follow the three subject pathway. In addition, the **Extended Project Qualification (EPQ)** represents half an A Level and will be taught during the first year of the Sixth Form. The **EPQ** develops research skills and fosters academic independence, and, as well as supporting the A Level courses being studied, it is excellent preparation for university study. The **Elective** is a non-examined component, and supports the development of a pupil's curiosity and interest beyond the traditionally assessed parts of the curriculum.

2. The study of four A Levels

The study of four A Levels is likely to be desirable only for a small number of pupils, most usually those who are studying Further Maths in addition to three other subjects. Those for whom the choice of four A Levels is suitable should bear in mind that we expect all four subjects to be studied for the duration of the Sixth Form. Consultation is required for any pupil who wishes to pursue four A Levels, and the academic team is on hand to guide such discussions. The option to complete an extended essay independently will also be available. Pupils wishing to retain a wider range of subjects should give careful consideration to the IB Diploma Programme.

3. The study of the International Baccalaureate Diploma Programme

Six subjects are studied, with three of these taken at Standard Level and three at Higher Level. In addition, pupils undertake the Theory of Knowledge course as well as the Extended Essay. It is also a requirement for the award of the Diploma that pupils should satisfactorily complete the CAS Programme.

The important point to bear in mind is that all of these pathways are academically challenging and rewarding; they prepare pupils effectively for university, enabling applicants from Charterhouse to stand out in an increasingly crowded field. Whichever course of study is selected, every opportunity is taken to promote a genuine appreciation of academic disciplines as well as fostering life-long learning.

The virtues of these courses and their grading structures have been widely recognised and are very much appreciated by admissions tutors at British universities including Cambridge, Oxford, Imperial and the other prestigious institutions in the Russell Group. Further to this, the IB Diploma Programme benefits from widespread international recognition.

A Level Courses

Our Sixth Formers wishing to specialise by pursuing the A Level route will select their courses from the options below:

Specialist Subjects	
Art and Design	English
Art and Design: Textile Design	Geography
Biology	History
Business	Latin
Chemistry	Maths
Classics (Ancient History)	Further Maths
Classical Greek	Modern Languages (French, German, Spanish)
Computer Science	Music
Design Engineering	Philosophy
Drama and Theatre	Physics
Economics	Politics

A Level courses are graded on a six-point scale. For the most competitive UK universities, such as Durham and Edinburgh, at least two A* grades and one A grade are likely to be needed as University Application grades to gain an offer for the most sought-after courses such as Economics, and at least three A grades for all other courses. For middle-ranking Russell Group universities such as York, AAB is a more likely standard offer.

A minority of our pupils will make an application to a UK university where an offer is made based on UCAS tariff points. These are as follows: A* = 56, A = 48, B = 40, C = 32, D = 24, E = 16.

It is important to note that universities do not mind which subjects an applicant does for A Level, as long as the specific course entry requirements are met. This means that the priority for a pupil making subject choices in A Level should be identifying the subjects in which they will perform best. Subjects that may once have been perceived as more well-respected by universities should be avoided if a pupil will likely get a worse grade in that subject than in another.

Pupils who are native speakers of a language other than English can be supported to complete an A Level qualification in that language should they wish to do so. This is essentially an independent undertaking, but a strong grade here can have a positive impact on a university application.

The International Baccalaureate Diploma Programme

Assessment

Pupils study six subjects: English Literature, a second language, a humanity, a science and mathematics, as well as an arts subject or another humanity or science, with three of these taken at Standard Level and three at Higher Level (allowing for greater depth of study in those areas). Up to 7 points are awarded for each subject regardless of the level at which the subject is studied. In addition, three Core points are available for the quality of work in the Theory of Knowledge course as well as the Extended Essay. A total of 45 points is available overall and this allows universities carefully to differentiate an applicant's attributes. It is also a requirement for the award of the Diploma that pupils should satisfactorily complete the CAS Programme. Further information about the IB Diploma Programme, can be found on the Charterhouse website and on the IB's website: <http://www.ibo.org/diploma>

We aim to offer the following subjects within the IB Diploma Programme:

Group	Group Name	Description	Subject
1	Language A Literature	Literature in English	English
2	Language A Language and Literature	Native Language	Mandarin, German, Italian
	Language B	Second Language (post-GCSE)	French, German, Mandarin, Spanish, Latin
	<i>Ab Initio</i>	Beginner's Language	Italian, Mandarin (SL only)
3	Individuals and Societies	Humanities	Economics, Geography, Global Politics, History, Philosophy
4	Experimental Sciences	Sciences	Biology, Physics (HL only), Environmental Systems and Societies (SL only), Sports, Exercise & Health
5	Mathematics	Analysis and approaches	Mathematics HL or SL
		Applications and interpretation	
6	Arts and Electives	The Arts	Visual Arts
		Electives	Business Management, Chemistry (HL only), Economics, History, Psychology
Core	Theory of Knowledge	Ways of Knowing	
	Extended Essay	Research Essay	Own choice of topic
	Creativity, Activity and Service		

Please note that HL Mathematics (either A&A or A&I) should only be attempted by very strong candidates.

Subject Choices and University Applications

Relatively few university courses have specific demands about what subjects are studied in the Sixth Form. Nevertheless, certain courses, particularly at Oxford and Cambridge, do have complex entry requirements and these should be checked on university and college websites. These will give full details of requirements for any course that pupils are considering.

The following guidelines on course requirements will also be helpful. The requirements relate equally to IB Diploma Programme and A Level subjects.

Architecture	Mathematics or Physics often preferred. Portfolio needed (Art or DT).
Business	Business not necessary but it confirms interest in the course.
Computer Courses	Mathematics and Science subjects.
Drama	English and Theatre preferred.
Economics / Finance	Economics is useful. Mathematics often essential and Further Mathematics likely to be preferred by the top universities.
Engineering	Physics and Mathematics required, Further Mathematics and Design Engineering desirable.
European Studies	Language required.
History of Art	A subject involving essay writing.
Modern Languages	At least one language.
Medicine / Dentistry	Chemistry is a requirement in essentially every case, one other science or Mathematics is expected alongside this; Biology is the most coherent option. However, the science requirements for individual medical schools do vary, and all potential medical applicants must consult the table of requirements on the following website: www.medschoolsonline.co.uk .
Product Design (Art & Design)	Mathematics, DT and Physics preferred.
Psychology	One or more Science or Mathematics subject required.
Sciences	Mathematics helpful.
Veterinary Science	Chemistry, Biology and one other Science or Mathematics subject required.

Engineering, Science, Mathematics and Computer Science courses at Oxbridge, Imperial, LSE and some other top universities will also require Further Mathematics or HL Mathematics.

For all UK courses, some advice is available in "Informed Choices" published by the Russell Group Universities: <http://www.russellgroup.ac.uk/for-students/school-and-college-in-the-uk/subject-choices-at-school-and-college/>.

A very comprehensive bank of resources and information can be found on **Unifrog**, the destinations platform for which all our pupils have an account, and are encouraged to use extensively as they consider their options.

If you have any concerns at all about subject choices with regard to particular university courses or recognition, then please contact the Futures Department – futures@charterhouse.org.uk

Subject Availability and Options

A Level courses

The timetable blocks are constructed based on the subject combinations our incoming sixth form pupils tell us they would like to study, and individual choices made can usually be met. Every effort is made to satisfy these, but timetabling complexities occasionally mean that it is not possible to guarantee all subject combinations. Any affected prospective pupil will be notified as soon as possible if this situation arises.

The study of specific periods of History is allocated according to the timetable by blocking and is not able to be specified by the pupil: pupils select History rather than a specific period of history.

The combination of Economics and Business at A Level is not available.

Mathematics and Further Mathematics are considered as two subject choices.

IB Diploma Programme

Charterhouse intends to offer all IB Diploma courses as published above. If, however, a course does not attract sufficient interest to warrant it running, it may have to be withdrawn. Any affected prospective pupil will be notified as soon as possible if this situation pertains.

Pupils are required to submit their subject choices by the end of the first week of March of the calendar year in which they will begin as a Specialist in order that we can aim to satisfy as many A Level pupils' choices as possible. Advice on which programme and which combination of subjects would best suit an individual pupil is available through the Sixth Form Advisory Team. Pupils at Charterhouse are advised during November of the Fifts and again after the trial examinations in January. Pupils joining Charterhouse as Specialists have the opportunity to access this advice at one of the specific events during January and February once they have received an offer of a place at the School, or via a Skype call with a member of the academic team.

The Core

All pupils at Charterhouse will develop important skills within their individual subject areas and in the wider community as a whole. Charterhouse believes that it is important for pupils to be able to apply those skills in a variety of contexts and thus the majority of pupils pursue a common core of study: the Extended Project Qualification or The Extended Essay, as well as a purposeful co-curricular programme including Sport and Service.

The EPQ / Extended Essay

Pupils have ample opportunity to develop their research skills within individual subject areas, but EPQ (for those doing three A Levels) and Extended Essay within the IB Diploma Programme allow for these skills to be enhanced, as well as for the exploration of individual topic areas that provoke interest. These pieces of work are an important part of Charterhouse's academic curriculum beyond subject specifications.

During their first year as Specialists, EPQ pupils choose a topic area that interests them and warrants further in-depth study. With our support, pupils then research and carefully plan a response to a question they construct in the form of either a dissertation, artefact, investigation, or performance. Within the IB programme, the Extended Essay will be based around one of the IB subjects the pupil is undertaking.

Creativity, Activity and Service (CAS)

Pupils following the IBDP are required to participate in a co-curricular programme comprising Creativity, Activity and Service (CAS) in order to complete their Diploma.

Creativity: The Arts (such as Art, Music and Drama) and any other activity which involves creative thinking or expression, such as making a video, photography, contributing to periodicals, cooking, house décor, Lack of Talent, performing in Artifex etc.

Activity: Physical exertion contributing to a healthy lifestyle. There is a huge range of sports available at Charterhouse, but Action does not mean just sport: it can include activities such as hill-walking or cycling or environmental projects which are physically demanding.

Service: Unpaid and voluntary activity to benefit another individual, a group or community. Some excellent service projects are already in place at Charterhouse, such as teaching in primary schools, visits to the elderly, working at the Royal Surrey County Hospital, instructing younger cadets in the CCF, acting as House or School Monitors, peer mentoring, volunteering as part of the Duke of Edinburgh's Award Scheme, producing charity concerts...etc.

Specialists are encouraged to come up with their own ideas for CAS activities.

One CAS activity should be a Project. This is defined as an experience which is planned and executed by the pupil in collaboration with at least one other person, and which lasts at least a month from conception to completion.

Experiences undertaken in the holidays count as part of pupils' commitment to CAS.

By the end of five Quarters, IBDP candidates will be able to provide evidence that they have 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; and developed new skills.

However, CAS is not just about participating in various activities. IBDP candidates will be required to reflect on their experiences and to make full use of their co-curricular activities as opportunities for learning. So, with the guidance of their tutor and the IB CAS Coordinator, candidates will plan their CAS activities and at intervals think about the progress they are making. That thinking will inform the rest of the activity. Planning and reflection will be recorded.

CAS activities may form part of a pupil's commitment towards completing the Duke of Edinburgh's Gold Award.

Theory of Knowledge

This course is only available to IB Diploma Programme candidates and is a compulsory requirement for them. It embodies the spirit and approach of the IB Diploma Programme as a whole. With the Extended Essay and Creativity, Action, Service components, it provides the cement that makes the Diploma a coherent and integrated qualification.

Theory of Knowledge (TOK) challenges pupils to question the bases of knowledge, to be aware of subjective and ideological biases and to develop the ability to analyze evidence that is expressed in rational argument. Based on five areas of knowledge – History, Human Sciences, Experimental Science, Mathematics, and the Arts - it compares and contrasts them, allowing pupils to develop a more mature view of them, in preparation for deeper study.

By focusing on four central questions – what shapes my perspective? where do our values come from? how can we navigate the world? how can we tell when we are being manipulated? - TOK seeks to develop, for example, the ability to distinguish between good and poor reasoning; to spot intentional or accidental bias (in oneself and in others), and to spot inconsistencies. The application of these skills varies according to subject, and pupils might examine, for example, how reasoning in Mathematics is similar to, and different from, that in the Natural Sciences; or the emotional and/or rational bases for ethical decision making.

In addition to this critical thinking aspect, the course recognizes that intellectual tools are double-edged, and encourage certain dispositions such as a willingness to challenge one's own deeply-held convictions, a willingness to hold ourselves to the same standards to which we hold others, and a willingness to entertain opposing views charitably. In this way the course encourages an openness, intellectual honesty and, where appropriate, an intellectual humility.

Pupils will submit an essay on one essay title from a choice of questions pre-released by the IB; they will also produce an exhibition of three objects with commentary, with the intention of demonstrating how TOK manifests in the real world.

Sixth Form Specialist Courses

Art and Design AQA A Level

Requirements

Pupils are expected to have taken Art and Design (including Textile Design) at GCSE level, or, if they do not have a GCSE then pupils in exceptional circumstances should be able to prove ambitious standards of creativity through evidence in a portfolio.

Outline of the course

When you study A Level Art and Design you learn to work both independently and collaboratively, you also gain experience in time management. Studying Art and Design, teaches determination and resilience as well as building confidence in a student's individual approach. Lessons in Studio include teaching functional and useful skills that prepare students for future careers in the arts as well as allowing them to express their thoughts and realise their intentions through a wide range of media. Refinement of processes is fundamental to success. After an initial foundation, students specialise in a chosen media to aid this refinement. Studio forges links with arts organisations and creative practitioners, companies, and agencies. Visits and workshops are organised which provide inspiring opportunities for students to see what it's like to 'do' a particular job and hear how artists and designers got where they are. Gallery Visits to London as well as overseas trips to places such as New York, LA and Europe form part of the course. Trips with other departments encourage cross-curricular collaboration which is seen as advantageous when studying art and Design.

Key skills

- Self-Expression and Managing Feelings.
- Improves Confidence and Self-Esteem.
- Fine Motor Skills.
- Patience.
- Improves Concentration.
- Planning and Foresight.
- Organisational Skills.
- Thinking outside the box
- Refinement of and expertise in an Art/Design process

The A level course encompasses varied and diverse approaches including painting and drawing, printmaking, sculpture, ceramics, mixed-media, installation, photography, site specific work, digital film and video, animation fashion and textiles.

Component one in the first year enables pupils to build up a portfolio of a 'personal investigation' that demonstrates an in-depth series of explorations within the chosen areas of study. This will include perceptive, relevant, and individual recording, analysis and collation of observations and insights as well as extensive experimentation with ideas, concepts, materials, and processes. There are investigations into the practice of related artists within a broad cultural, political, and personal context. Drawing from personal experience will help develop skills and ways of interpreting and navigating the world. Sketchbooks are used throughout the course. During the personal

investigation pupils write an extended essay relating to a chosen subject which adds gravitas and insight to their practical work.

Component 2 is inspired by an external set of questions. Students select one and from this form a focused, informed and personal series of preparatory work and outcomes. One outcome is produced under timed conditions over a period in May.

Combinations with other subjects

Art and Design naturally complements studies in the other artistic disciplines as well as the humanities. Pupils study Art and Design in addition to a wide variety of other subjects as well as Math's and Science which has proved highly successful in recent applications to study Architecture.

University courses and careers

Studio has a reputation for high standards and pupils regularly obtain places at top universities and art colleges in the UK as well as the US and Europe. Courses in Art and Design are constantly evolving as digital media and coding are combined in new courses in game design where technical and creative skills combine. Architecture, History of Art, Curation are all courses that recent Carthusians have gone on to study. Art is acceptable for entrance to other university courses. The Art Foundation course is recommended for most pupils who intend to continue with a creative practical course at higher education level.

Art and Design: Textile Design AQA A Level

Requirements

Pupils are expected to have taken Art and Design (including Textile Design) at GCSE level, or, if they do not have a GCSE then pupils in exceptional circumstances should be able to prove ambitious standards of creativity through evidence in a portfolio.

Outline of the course

Textiles is taught within the Art and Design Syllabus and so follows the same pattern as the Art and Design specification of component one and two. For anyone interested in fashion design, interior design, textile art, fashion journalism, styling, retailing, costume design for theatre and film, and fashion illustration then A level Textiles is an excellent choice. It merges the cutting-edge world of Fine Art, Textiles and design.

A level Textiles students have outstanding opportunities to showcase their work in a new building which comprises of a dedicated textile studio and gallery.

Studio offers expert guidance and comprehensive support for students applying for creative degree courses at university. Students take part in group critiques to analyse and develop their work, join portfolio preparation workshops and receive one-to-one support during the application process.

Students are required to work in one or more area(s) of textile design, such as those listed below. They may explore overlapping areas and combinations of areas:

- fashion design
- fashion textiles
- costume design
- digital textiles
- printed and/or dyed fabric and materials
- wallpaper
- interior design
- constructed textiles
- art textiles
- installed textiles.

Combinations with other subjects

Textile design naturally complements studies in the other artistic disciplines as well as the humanities. Pupils study Textiles in addition to a wide variety of other subjects as well as Business or A Level Economics where students move into a business field with a fashion element. Other students select subjects such as English and Media with the aim of pursuing a career in journalism or creative media.

University courses and careers

Studio has a reputation for high standards and pupils regularly obtain places at top universities and art colleges in the UK as well as the US and Europe.

A level Textiles students have a wide choice of career pathways including fashion accessories designer, bespoke tailoring, theatre costume designer, pattern cutter, fabric technologist, fashioner editor, stylist, visual merchandiser and forecasting agent. As well as alternative options like university lecturer, art therapist and museum curator.

Biology

Cambridge International A Level

Requirements

This course builds on the knowledge, understanding and practical skills that are developed in the GCSE and IGCSE courses: most pupils will have sat either Biology as a separate subject, or will have completed dual-award Science. At International A Level there is a greater emphasis on scientific analysis, practical skills and the understanding and application of knowledge, than in the rather more factually based IGCSE.

Outline of the course

This is a modern, rigorous and exciting Biology course. It has a strong focus on cell and molecular biology, including gene technology, that underpins the current economic growth in biosciences. Human physiology and disease form a major element of the syllabus. The course mixes breadth with depth and provides the pupil with a good understanding of a variety of disciplines within the biological sciences: from biochemistry to biodiversity, from neuroscience to evolution.

We have selected the International A Level over the basic A Level as its philosophy fits with that of Charterhouse Science. It is a rigorously scientific A Level with a testing practical element. It builds understanding from biological principles and then applies these across topics, rather than testing topics in isolation. This better develops the skills that will prepare pupils for university and beyond, whether studying courses in biological sciences (including medicine) or supporting studies in other subjects.

Pupils can expect to undertake laboratory work on a regular basis and will attend a field course in Pembrokeshire. There is no coursework element, but 24% of the final assessment relates to the practical exam and experimental paper. This includes microscopy, experimental practical, data analysis (including statistics) and experimental design and evaluation. The other papers comprise a variety of multiple choice, short answers and longer written responses.

Combinations with other subjects

There are obvious links with the other sciences and Mathematics, as well as Geography. Carthusians have also taken Biology successfully with a wide range of other subjects. It requires an ability to apply an evidence-based scientific method, a practical approach and an ability to express arguments coherently.

University courses and careers

Biology A-Level, along with Chemistry, is essential for Medicine, Biomedical and Veterinary Medicine courses. It is usually a preferred subject for entry Biochemistry, Natural Sciences courses and Psychology (where it is often preferred over A-Level Psychology).

Developments in biotechnology and medicine are likely to be key drivers of economic growth in the coming generation. Graduates with strong biological qualifications are highly employable. In addition, the International A-Level course fosters a wide range of skills supporting careers in business and the professions. In particular, the empirical approach to analysing issues, a practical approach to problem solving, the ability to use math's and statistics to analyse information and clear expression of arguments, both orally and in writing, are all skills desired by employers.

Business

Edexcel Business A Level

Requirements

There is no requirement to have studied business before starting the Business A level course. A serious interest in business combined with strong writing and numeracy skills are the key prerequisites. Self-discipline and real motivation are also required as pupils will be carrying out more independent learning.

Course outline

A level Business aims to develop an appreciation of the value of business activity, plus a practical understanding of how businesses operate and why business decision-making is so important. The OCR A level course aims to blend academic rigour with the development of practical business skills so pupils are able to identify with and appreciate the relevance of problem solving in a real world context.

The course covers many relevant contemporary business issues such as project management such a vital component of the 'post school' world of Business as well as the more classic. Thus, for example, there are topics such as corporate social responsibility, China and India as emerging economic powers, waste management and off-shoring. This course places an increased emphasis on decision making and encourages an understanding of why business size and scope makes such a difference to the strategies adopted. Pupils will be expected to show a keen interest in business affairs and to show evidence of that knowledge both in the classroom and in their written work. The course also focuses on developing communication and presentation skills vital for future employability. Pupils will be required to write more traditional style open-ended essays in which they must construct an argument drawing theory and real world understanding together. There is also the requirement to write extended answers to questions based on a case study that test the skills of knowledge, application, analysis and evaluation.

Students must be aware that the course involves significantly more mathematics than Economics. It requires pupils to become competent and confident in the calculation and interpretation of business data. Financial accounting and numerical decision making techniques form a central part of a business's tool kit.

Combinations with other subjects

An A level in Business can be linked successfully with almost all other areas of study. However, because Business as well as Economics contain an overlap in content whilst having very different assessment objectives: this can be confusing for pupils and so deleterious to their outcomes. For these reasons, these two subjects are not able to be taken together as two Full Courses.

University courses and careers

Business provides an excellent introduction to the study of Business at degree level.

Chemistry

Pearson Edexcel A Level

Requirements

Students choose the subject because they have enjoyed its study and been successful in previous examinations. As a result of the fact that this course builds on the knowledge, understanding and practical skills that are developed in (I)GCSE, it is expected that pupils will have taken Chemistry at this level.

Outline of the course

Too often Chemistry is seen as a large body of facts that defies straightforward rationalization. This course emphasises the underlying fundamental concepts which unify the subject and seeks to examine them through their application to modern chemical situations.

Being the central and a mature science, Chemistry has largely become a collaborative subject for the emerging fields of molecular genetics, biotechnology and nanotechnology. It is in this light that this course aims to teach pupils to be able to solve chemical problems in a variety of scientific contexts. The overall aim is to create in pupils a passion for science, to encourage reflection on the nature, history and philosophy of science and to allow the interested and independent pupil to take the subject further with confidence. Over the two years, all the work defined across the nineteen topics of the specification is taught in an integrated and logical way. However, material outside this is also covered wherever it helps in the understanding of the chemistry involved or reflects the interests and talents of the students.

While the theoretically perfect is aspired to, this is combined with the practically useful. Experimental work is carefully used to develop skills and ranges from that intended to reinforce theory to more open-ended or guided discovery practical's. The department is housed in a new, award-winning state-of-the-art building opened in September 2018. We are exceptionally well endowed with equipment and first-hand experience of instruments and techniques is encouraged. During the course a wide range of study skills and learning experiences is covered in order to promote the students' confidence and autonomy. The Edexcel A Level is a linear course taught over 2 years and examined by means of 3 written papers.

Experimental and investigative work

Chemistry is an experimental science and therefore pupils will be engaged in practical work throughout the course. This work has several aims: to reinforce the theoretical content of the syllabus, to instil an understanding of the relationship between experiment and theory in the scientific method and to develop essential manipulative and observational skills. The course includes a practical endorsement element, which involves the carrying out of a series of core practical experiments. Each one is designed to build upon the skills and techniques acquired in the previous ones.

Combinations with other subjects

There is a mathematical element to the course and this must be taken into account when choosing to study Chemistry at A Level. Although not a prerequisite, studying Mathematics is recommended. There are also a number of synergies with the Physics course. For pupils planning to apply to read Chemistry at university the best combinations with this course are Mathematics, Physics and Biology.

University courses and careers

The study of Chemistry, with its uniquely wide span within the scientific spectrum, is an excellent way for a pupil to develop their intellect. It is essential for almost all undergraduate courses in Medicine. Pupils will acquire not only a powerful variety of analytical skills for problem solving, but also the ability to analyse critically and to ask pertinent questions. These skills are transferable to almost any context, and are highly valued in the world of commerce, finance, consultancy and law. It is interesting to note that over 50% of chemistry graduates do not work directly in the chemical industry.

Classical Greek

OCR A Level

Requirements

Pupils who wish to study Greek as Specialists will require experience of and success in Greek at GCSE or have demonstrated equivalent ability in the translation of Greek language to GCSE level.

Outline of the course

The first few terms will be spent in consolidating and improving language skills and in exposing pupils to a wide variety of Greek literature. Pupils will be introduced to writing in Greek, broaden their vocabulary and practise the analysis of sentences more complex than those they met at GCSE. They will also read widely in a variety of genres, learning the skill of literary criticism, including the writing of essays. As the course progresses we tackle more challenging prose composition and unseen translation work, carefully chosen to promote further discussion and understanding of the classical world and prepare pupils for their language papers.

Pupils also study prescribed literature, which comprises 50% of the course. We aim to expose pupils to as wide a range of genres as possible in both prose and verse. This year we have explored the themes of heroism, isolation and madness in Sophocles' great tragedy *Ajax* and Plato's philosophy of love and sexuality in his *Symposium*. In the second year we study the historian of the Peloponnesian war, Thucydides. Pupils are required to write extended literary commentaries and thematic/contextual essays in response to these texts.

Assessment

Pupils will be prepared for examination in the following four papers:

Paper 1 *Unseen Translation* (1hr45mins) – 33%

Candidates will be required to translate two passages, one of prose and one of verse, into English.

Paper 2 *Prose Composition* (1hr15mins) – 17%

Candidates will be required to translate a passage of English prose into Greek.

Paper 3 *Prose literature* (2hrs) – 25%

Candidates will be required to write answers to questions on passages of their prescribed prose texts and also to write an essay on a text of their choosing.

Paper 4 *Verse literature* (2hrs) – 25%

As per Paper 3, but for a choice of verse authors.

Combinations with other subjects

The study of a Classical language develops analytical and problem-solving skills in combination with artistic sensitivity through the allied study of literature. It is commonly combined with languages such as English, French, Spanish, or German, with humanities such as History, and with sciences such as Mathematics and Economics. There are, however, no required or precluded combinations; it often works well as an 'outlier' due to the range of interests to which it caters and disciplines it instils.

University courses and careers

An A Level in Greek gives excellent preparation for a wide range of courses at university. Apart from the study of Classics and Archaeology, the intellectual rigour required to succeed in Greek sets those pupils apart from the crowd of those who wish to study linguistics, history, computer science and even medicine. As for careers, it has never been less true that the study of Classics fits one only to be a Classics teacher! Students of Classics enjoy success in a huge variety of careers from law, journalism and accountancy, to marketing, management and publishing.

Classical Civilisation

OCR A Level

Requirements

There is no need to have studied a classical language or Classical Civilisation at (I)GCSE before taking the subject as a specialist. The main prerequisites are an interest in the classical world, a desire to read texts and sources in translation and a willingness to engage with the subject matter verbally and in essays.

Outline of the course

The Classical Civilisation course is based on the study of the literature, art and archaeological sources from Greece and Rome.

In the first year, we study two modules. The first covers the epic literature of Homer, with the opportunity to read either the *Iliad* or the *Odyssey* in translation. We encounter fascinating characters such as Achilles, Agamemnon and Hector and the gods Zeus, Hera and Athena, whilst exploring themes such as the nature of the Homeric hero, the role of the gods and fate, women and slaves and the portrayal of war.

The second module is more historically-based. We study the shift from Roman Republic to Principate through an examination of the emperor Augustus' artful manipulation of his own image in art, architecture and literature. We consider how his opponents, Mark Antony and Cleopatra, are portrayed to suit Augustus' own propaganda campaign in Rome and we track his inimitable rise to power and the methods by which he sustained and cemented his position as sole ruler of the Roman world.

In the second year, we turn back the clock and look at how the Roman Republic disintegrated, and the circumstances that enabled a man like Augustus to reign supreme. Students of politics and history alike can learn plenty from its unravelling under the pressure of empire and the unbridled megalomania of some of its protagonists. In parallel to this we study Virgil's *Aeneid*, seen by some to be the national epic of the Romans, by others as a key propaganda tool for Augustus' new regime.

Assessment

Pupils sit three final examination papers, all at the end of the second year of their course:

Paper 1: *World of the Hero: Homer's Iliad or Odyssey and Virgil's Aeneid* (140 minutes) -40%

Paper 2: *Imperial Image* (105 minutes)- 30%

Paper 3: *Politics of the Late Republic* (105 minutes)- 30%

Each paper contains a mixture of source-based commentary and longer essay work.

Combination with other subjects:

The study of Classics is commonly combined with other Arts and Humanities courses such as English and History. There are, however, no required or precluded combinations.

University courses and careers

An A Level in Classical Civilisation develops pupils' analytical and problem-solving skills as well as their ability to put forward coherent arguments based on close examination of evidence. It provides excellent preparation for many courses at university. Apart from students of Classics and Archaeology, students of Law, English and historians will also find an A Level Classical Civilisation a great support for their studies. Those who have studied the subject enjoy success in a huge variety of careers from journalism to accountancy, marketing, law, management and publishing.

Computer Science

AQA A Level

Requirements

The key requirements for success in A level Computer Science are the skills of analytical thinking and problem solving. The course requires the ability to think in both abstract and concrete terms, breaking larger tasks into smaller units to understand their structure. Whilst (I)GCSE Computer Science is not essential for the course, some familiarity with coding is (you will be required to write programs in Python and have options to develop software using other languages). The most successful A level computer scientists typically have a grade 8 or better in IGCSE Mathematics and a grade 7 in Mathematics should be seen as the minimum grade for contemplating this course.

Outline of the course

Computer Science is at the heart of the modern world. Its principles are based on modelling and analysing problems and designing and implementing solutions. You will require precision, creativity and reasoning to engage with its problems as puzzles and carefully work through them to develop satisfying solutions

In A level Computer Science, you will learn the principles of computation and algorithms in theoretical and practical contexts, and study topics including:

- systems architecture from machine code to networks
- software and programming from coding to communications
- databases as big data as well as the backdrop behind social media
- hardware/computer design and the use of information technology in society

As well as the written papers, there is coursework project which tests your ability to solve or investigate a practical problem or even design an app, learning as part of the process the software engineering skills that underlie computer game development.

Combinations with other subjects

Computer Science can complement any subject and has strong connections to Mathematics, Further Mathematics, Physics and Economics as well as Chemistry, Biology and Design. Though it contrasts with the humanities by lacking essay writing the analytic skills it fosters will help with these subjects, it shares creativity with the arts and the logic of coding and combine well with languages.

University courses and careers

A level Computer Science lays a strong foundation for university study of Computer Science, Engineering and Physics and a good grade in Computer Science would support applications for degrees in Mathematics, the sciences and Economics well. Computer scientists are often successful in a range of in other subjects too as the intellectual rigour, thinking and learning skills you will get from Computer Science will be well regarded for entry into almost any university course.

Career-wise, Computer scientists are some of the most highly-sought graduates. Their problem-solving skills and IT capabilities make them highly attractive to employers, and the work of a computer scientist will often involve a significantly rewarding time to money ratio. Though a degree in Computer Science is not the only route into such jobs, if you want to pursue Computer Science at university, you should combine it with A Level Mathematics as this is a pre-requisite at most institutions.

Design Engineering

OCR A-Level

Requirements

Pupils are expected to have taken Design & Technology at GCSE level. If not, then, in exceptional circumstances, pupils will be asked to submit a portfolio of work to showcase their design capabilities. It is also beneficial to study Maths in combination with this course.

Outline of the course

The content of the curriculum is always linked to context, the outside world and is interdisciplinary in nature. It helps students become creative problem solvers as individuals and a member of a team, by equipping them with transferable hard and soft skills; such as empathy and the iterative design process to tackling today's and tomorrow's global problems. Furthermore, it develops confidence through individual curiosity, experimentation and having fun.

Students will experience a range of topics from robotics, user centred design, mechanisms, sustainability, computer aided design and 3D printing to name a few examples. Please see the syllabus on the OCR website for more information - <https://www.ocr.org.uk/Images/304609-specification-accredited-a-level-gce-design-and-technology-h404-h406.pdf>. You can also see example of students work on the departmental social media pages @Charterhouse_DE. Students are also invited to submit their work into national competitions, such as Vex Robotics, TDI and Triumph Design Awards.

Content Overview:

Written Paper 1: Principles of Design Engineering - 1 Hour 30 minutes. 80 marks (25%)

This paper is set out through four sets of questions that predominantly cover technical principles within each endorsed title. Which are: Analyse existing products, applied mathematical skills, technical knowledge of materials, processes and wider social such as sustainability.

Written Paper 2: Problem Solving in Design Engineering - 1 Hour 45 minutes. 70 marks (25%)

This component has a series of longer answer questions that require learners to demonstrate their problem solving and critical evaluation skills.

Iterative Design Project (coursework) - 100 marks (50%)

The 'Iterative Design Project' requires pupils to undertake a substantial design, make and evaluate project centred on the iterative processes. Pupils will identify a design opportunity or problem from a context of their own choice, and create a portfolio of evidence in real time through the project to demonstrate their competence.

Combinations with other subjects

The obvious combinations is with maths and all the sciences in order to facilitate a career in Engineering. Another combination is with Art and textiles, in order to prepare for Product / Industrial Design courses. It also goes with every other subject due to the adaptability of the coursework, for example in geography, students could design a piece of equipment to collect data while on a mountain or in Economics where a student could try and be entrepreneurial and design a system to incentivize a system to collect plastic and reformed into other products which can be sold or patented.

University courses and careers Pupils interested in a wide range of Engineering subjects such as Mechanical, Electrical, Civil, Aerospace, Software. Also Architecture, Product Design, Fashion Design and Information Technology. Furthermore, Degree Apprenticeships are becoming more popular especially with Dyson and Rolls Royce.

Drama and Theatre

Pearson Edexcel A Level

Requirements

This is a demanding and interesting subject in which pupils will gain knowledge and understanding of theatre practice through rigorous academic study, practical exploration and as discerning members of an audience. It is not necessary to have taken (I)GCSE Drama before, but any previous theatrical experience will be of value. The key to success is to be equally willing to participate in and understand both the practical and theoretical elements of the course.

Outline of the course

Component 1: *Devising* – 40%

Pupils will develop their creative and exploratory skills in order to devise an original performance. The starting point for this will be a key extract from a performance text and an influential practitioner; pupils may participate as either a performer or a designer. This component is internally assessed and externally moderated. There are two parts to the assessment, firstly as a performer or designer in the piece (20 marks) and secondly a portfolio, between 2500 and 3000 words in length, explaining the creative process (60 marks).

Component 2: *Text in Performance* – 20%

The knowledge and understanding acquired in Component 1 will be applied here to interpreting a key extract from two performance texts. In the first element of the component, the pupils as a group will perform one key extract from a published script. In the second element, pupils will present either a monologue or a duologue. For both elements there is the choice of being either a performer or a designer. This component is externally assessed by a visiting examiner.

Component 3: *Theatre Makers in Practice* (two hours and thirty minutes) – 40%

This is a written examination requiring pupils to consider, analyse and evaluate how different theatre-makers create impact. Pupils will practically explore texts and practitioners in order to demonstrate how ideas for performance might be realised from page to stage. In addition, pupils will also critically analyse and evaluate their experience of a live theatre performance. The paper is in three sections:

- An evaluation of live theatre.
- Page to stage: responding to an unseen extract from their chosen performance text, pupils will be asked to consider its possible staging and its intended impact on the audience.
- Interpreting a performance text in the light of one practitioner.

Combinations with other subjects

There are natural links with the study of English, languages and the humanities, as well as other artistic disciplines. That said, some pupils take Drama and Theatre in conjunction with a science, Business or Politics as the course covers literary analysis, history, significant artistic movements, social and political contexts to name but a few.

University courses and careers

Drama and Theatre is accepted for arts, humanities and modern language courses. The breadth of knowledge and experience that pupils gain from this course will stand them in good stead for a range of careers. The subject demands a great deal of an individual and 'pulls' them in a number of different directions, whilst developing their EQ. The confidence, team building, presentation and communication skills are invaluable in all walks of life.

Economics

Pearson Edexcel A Level

Requirements

The keys to a good outcome in A Level Economics are:

- The ability to think logically
- An interest in current affairs
- The ability to communicate these to the examiner

The subject is taught in a discursive manner so that those who read newspapers and watch the news will find it most interesting. Assessment is based on a combination of multiple choice, short answers, data response and extended open-response type questions. It is not necessary to take Mathematics as a Specialist to achieve a high grade in Economics but a mathematical mind and an ability to use graphs effectively is very helpful.

Outline of the course

The study of Economics is divided into two parts: Microeconomics and Macroeconomics. In Microeconomics in the first year, pupils cover the fundamental economic question of scarcity of resources, how free markets work (supply and demand), how markets 'fail', and what governments can do to make the economy more efficient. In Macroeconomics in the first year, pupils look at measures of the performance of the national economy and policies that the government can use to influence the national economy. The second year consolidates and expands the theory that has been encountered in the first year. In Microeconomics in the second year, pupils look at Theory of the Firm which involves looking at firm behaviour and its impacts. In Macroeconomics in the second year, pupils study the issues associated with international trade and protectionism as well as looking at factors that contribute to economic development.

The exam involves three papers:

Paper 1 Markets and Business Behaviour (multiple choice, short answers and data response questions)

Paper 2 The National and Global Economy (multiple choice, short answers and data response questions)

Paper 3 Synoptic Paper (data response questions)

Combinations with other subjects

Economics will work well with a wide range of other subjects and especially with those subjects that require logical thought and/or an appreciation of the wider world. Carthusians have most commonly had success linking Economics with Mathematics, Physics and Chemistry. Those pupils more interested in the humanities, will find that Geography and History will support their understanding of Economics. Modern Languages with Economics makes a useful career-orientated combination.

Please note that due to Economics and Business and Management containing an overlap in content, they are not able to be taken together.

University courses and careers

As well as going on to study for first degrees in Economics, many Carthusians use their acquired knowledge to enter fields such as accountancy, law, business, information technology and political science, or use it as a basis for studying Modern History or Geography. Economics opens up a wide range of career paths.

It should be noted that A Level Mathematics is required if you want to study Economics at UK universities. The best universities usually say that A Level Further Maths is highly desirable so it is sensible to study Further Maths if you are serious about pursuing Economics at university.

English Literature

OCR A Level

Requirements

Curiosity, enjoyment of reading and a willingness to explore and challenge ideas are the keys for success in the subject. Hashes are discussion-based, so students need to be ready to share and justify their perspectives. The most successful students are those who undertake additional independent work alongside their studies in the classroom. We welcome driven, enthusiastic pupils who are intellectually curious and proactive. A Grade 7 in English Literature GCSE (or equivalent) should be seen as the minimum standard to pursue this subject at A Level.

Overview

The syllabus celebrates literature in all its forms, allowing a wide variety of texts and periods to be taught over two years. The course includes traditional texts from the Literary Canon, such as Hamlet and Paradise Lost, as well as modern classics such as Beloved, The Great Gatsby, A Streetcar Named Desire and The Handmaid's Tale. The coursework component, which focuses on post-1900 texts, is often the most popular. Recent choices include White Teeth, The Bell Jar, Equus, Who's Afraid of Virginia Woolf, The Wasteland, Fleabag and the lyrics of Bob Dylan to name a few. The step up from GCSE to A level is substantial; students learn to incorporate contextual factors and critical perspectives into their writing. We look at texts in their wider context of literary theory and scholarly debate, leading to a more holistic understanding and an enriched appreciation of the concept of Literature.

There are three core components of the course:

1. Drama and Poetry pre-1900

- One Shakespeare play studied in depth (Hamlet by William Shakespeare)
- One pre-1900 drama text in comparison with one pre-1900 selection of poetry (for example, A Doll's House by Henrik Ibsen with the poems of Christina Rossetti)

2. Comparative and Contextual Study

- One topic area to be studied over the course of the two years (usually either American Literature 1880-1940 or The Gothic)
- Two core texts are studied comparatively (for example The Great Gatsby and The Grapes of Wrath, or The Bloody Chamber and The Picture of Dorian Gray)

3. Literature post-1900 (3000-word coursework folder)

- Three texts are studied, including poetry, prose and drama.
- Two coursework essays are produced: one close-reading commentary and the other comparative and contextual.

Combinations with other subjects

English Literature works well with any combination of subjects, be they arts, humanities or sciences. Essay-based subjects, such as History or Philosophy, are strong pairings because of their shared focus on articulate expression and logical argument. Students who take English alongside Maths or Science also enjoy the contrasting styles of learning and find that the core skills of analysis and evaluation are surprisingly transferable.

University courses and careers

The skills acquired whilst studying English Literature are highly-prized by universities. Studying English is excellent preparation for any university course and particularly those which require analytical writing. It is an ideal preparation for careers in journalism, law and media, but the transferable skills developed through studying English are increasingly valued by recruiters in this digital age in a wide range of fields, including consultancy, finance and management.

Geography

Cambridge International A Level

Requirements

Whilst it is not necessary to have studied (I)GCSE Geography before taking the subject as a Specialist, it is highly recommended.

Overview

Geography – studying the Earth’s surface features and related human activity – has a vital place in the 21st century curriculum. The subject helps us to understand our own lives in a “global world” and face vital issues such as climate change, the “war on terror”, water, energy and food security and the eradication of poverty. Geography offers fascinating insights into the way human and physical processes interact. We hear every day that the world is short of space and that human beings are placing greater and greater demands on the Earth and its systems. However, what causes droughts, floods or hurricanes? Are they “natural phenomena” or the result of human activity? Geography gives us the language and techniques to approach these questions with confidence. By studying real people in real places, Geography shows how daily lives are shaped by local circumstances – not only the physical characteristics of the place, but also the social, cultural, economic and political opportunities and constraints. Geography shows how each local place exists in a regional, national, international and global context. This is a practical subject, teaching skills young people need across the school curriculum, at home and at work. Beyond the specific subject material, Geography students develop skills in source interpretation, data generation, and statistical analysis. Students develop their agency and voice through critical thinking and synoptic exercises, helping them further their ability to articulate their ideas.

Outline of the Course

Four compulsory components taken at the end of the two-year course; there is no coursework element in this course.

Paper 1 *Core Physical Geography*

Compulsory topics: Hydrology and Fluvial Geomorphology; Atmosphere and Weather; Rocks and Weathering.

Paper 2 *Core Human Geography*

Compulsory topics: Population; Migration; Settlement Dynamics.

Paper 3 *Advanced Physical Geography*

We study the options of: Coastal Environments and Hazardous Environments

Paper 4 *Advanced Human Geography*

We study the options of: Production, Location and Change and Global Interdependence

Fieldwork

Whilst there is no examined fieldwork element of the course, trips are designed to provide context to the content studied in class. Our intention is to take the second year specialists abroad in October to see the theory they have studied in action.

University courses and careers

A qualification in Geography is well-regarded. It complements a variety of other subjects, both arts and sciences and, as a result, can pave the way to a wide range of courses at university. Also, lectures by leading academics are organised by the Department and the Guildford Geographical Association.

History

AQA A Level

Requirements

It is not necessary to have studied (I)GCSE History before taking the subject as a Specialist.

Outline of the course

The syllabus consists of three components:

- Breadth study (40%)
- Depth study (40%)
- Historical Investigation (Personal Study) (20%)

The first two components are taught across both years. They involve the study of a substantial period of History. One of the two components will be a British History option and the other will be non-British. Each component will require candidates to write a skills-based exercise and two essays in 2 hours 30 minutes, at the end of the second year.

The third component, introduced at the end of the first year, will be an essay of 3,500 – 4,500 words. This should take the form of a question in the context of approximately 100 years. It cannot duplicate the content of options chosen for Components 1 and 2. Taken together, Components 1, 2 and 3 must be from a chronological range of at least 200 years.

The Department will offer three routes, which cover the medieval, early modern and modern periods, depending on the timetabling arrangements for that academic year and the availability of teaching staff. Due to the way the timetable is constructed and because of other subject choice combinations, it is not possible to choose between routes.

The three routes are as follows:

Route ONE	The Tudors: England 1485-1603	France in Revolution, 1774-1815
Route TWO	The Age of the Crusades c.1071-1204	Royal Authority and the Angevin Kings 1154-1216
Route THREE	The Making of a Superpower, USA 1865-1975	Royal Authority and the Angevin Kings 1154-1216

In addition, all pupils complete their 3,500-4,500 word coursework piece on 20th Century British Political History.

Combinations with other subjects

History combines well with almost any other subject because it requires both the empirical skills of science and the creative imagination of the arts.

University courses and careers

History is one of the most versatile departure points for pupils considering university courses. Many of our pupils go on to study History at undergraduate level, but some will opt for related disciplines such as Law or PPE. Even those moving into unrelated areas will find that the intellectual skills fostered by the study of History – the ability to analyse, explore and communicate in a clear and interesting way – will be profoundly useful.

Latin

OCR A Level

Requirements

Pupils who wish to study Latin as Specialists will require experience of and success in Latin at GCSE (or equivalent).

Outline of the course

The first few terms will be spent in consolidating and improving language skills and in exposing pupils to a wide variety of Latin literature. Pupils will be introduced to writing in Latin, broaden their vocabulary and practise the analysis of sentences more complex than those they met at GCSE. They will also read widely in a variety of genres, learning the skill of literary criticism, including the writing of essays. As the course progresses we tackle more challenging prose composition and unseen translation work, carefully chosen to promote further discussion and understanding of the classical world and prepare pupils for their language papers.

Pupils also study prescribed literature, which comprises 50% of the course. We aim to expose pupils to as wide a range of genres as possible in both prose and verse. This year we have explored corruption, politics and power in Imperial Rome in the study of Tacitus' *Annals IV*, the text that was the inspiration for Carthusian Robert Graves' own novel 'I, Claudius'. In verse literature we are studying the final book of Virgil's great epic, the *Aeneid*, which sees the enemy leader Turnus betrayed by the gods and forced to face the hero Aeneas in fatal single combat. Pupils are required to write extended literary commentaries and thematic/contextual essays in response to these texts.

Assessment:

Pupils will be prepared for examination in the following four papers:

Paper 1 *Unseen Translation* (1hr45mins) – 33%

Candidates will be required to translate two passages, one of prose and one of verse, into English.

Paper 2 *Prose Composition* (1hr15mins) – 17%

Candidates will be required to translate a passage of English prose into Latin.

Paper 3 *Prose literature* (2hrs) – 25%

Candidates will be required to write answers to questions on passages of their prescribed prose texts and also to write an essay on a text of their choosing.

Paper 4 *Verse literature* (2hrs) – 25%

As per Paper 3, but for a choice of verse authors.

Combinations with other subjects

The study of a Classical language develops analytical and problem-solving skills in combination with artistic sensitivity through the allied study of literature. It is commonly combined with languages such as English, French, Spanish, or German, with humanities such as History, and with sciences such as Mathematics and Economics. There are, however, no required or precluded combinations; it often works well as an 'outlier' due to the range of interests to which it caters and disciplines it instils.

University courses and careers

An A Level in Latin gives excellent preparation for a wide range of courses at university. Apart from the study of Classics and Archaeology, the intellectual rigour required to succeed in Latin sets those pupils apart from the crowd of those who wish to study linguistics, history, computer science and even medicine. As for careers, it has never been less true that the study of Classics fits one only to be a Classics teacher! Students of Classics enjoy success in a huge variety of careers from law, journalism and accountancy, to marketing, management and publishing.

Mathematics and Further Mathematics

The Mathematics department offers two challenging and enjoyable A Level courses in which pupils grow not only as mathematicians but also as resourceful problem solvers. Single Mathematics is highly algebraic and takes IGCSE as its starting point. Double Mathematics takes off from where freestanding mathematical qualifications such as the Level 2 Certificate in Further Mathematics or Additional Mathematics leave off. Both courses move at demanding pace, combine well with other subjects, and provide a rewarding and inspiring education.

These courses enable pupils to:

- Learn a broad range of mathematical skills and know how they can be used in the real world
- Deepen their understanding of mathematical thought, recognizing how different branches of the subject are connected and appreciating the beauty of mathematics
- Apply their knowledge to analyse problems, interpret data and solve hypotheses
- Develop their abstract thinking skills, forming conjectures, communicating arguments and creatively applying their understanding to elevate methods and produce elegant solutions

With such higher-level thinking skills fostered by the discipline, there is little wonder that universities and employers place a high value on the academic training it provides. Admissions tutors in Philosophy, Languages, Law as well as the Arts and Humanities value the logic and rigour of the subject. The data analysis skills accrued in statistics underpin most research in the Social Sciences, Biology and Medicine as well as being useful in some Economics degrees. Mathematics is essential for courses in Engineering, Computer Science and the Physical Sciences and commonly required to study Earth Sciences. Beyond this, the department has a proud record of preparing pupils to read Mathematics at leading universities.

Mathematics (Single Mathematics)

Pearson Edexcel A Level

Requirements: Experience tells us that a grade 8 or 9 at IGCSE is essential for success in Single Mathematics. Even then, some pupils find its abstraction and algebraic complexity demanding. Pupils who have studied GCSE rather than IGCSE and those coming from other courses will find that preparatory work on algebra, differentiation, trigonometry and graph transformations provide a firm foundation for success.

Overview: Single Mathematics comprises Algebra, Geometry, Calculus, Mechanics, Statistics and Probability. There is no coursework and three two-hour papers, comprise the examination.

Further Mathematics (Double Mathematics)

Pearson Edexcel A Level

Requirements: With Further Mathematics generally considered the hardest of all A Levels, to succeed in its study a high degree of prior knowledge is necessitated. Successful pupils have generally obtained a strong grade 9 at GCSE and a good mark in a freestanding mathematical qualification. We therefore recommend that pupils are entirely conversant with the topics of the AQA Level 2 Certificate in Further Mathematics or OCR Additional Mathematics in order commence the course.

Overview: This course leads to two A Levels, one in Mathematics and one in Further Mathematics; it therefore counts as two subject choices. It is particularly suitable for those intending to pursue Mathematics, Physics, Engineering and Econometrics courses at a top university. Though the course covers the same topics as Single Mathematics but does so in considerably more depth. The examination consists of four 90-minute papers in addition to those taken for Single Mathematics; there is again no coursework.

Modern Languages – French, German and Spanish

AQA A-Level

Requirements

Pupils should have taken a (I)GCSE in the language before starting on the Specialist course. All pupils studying modern languages at Specialist level are expected to spend time in the foreign country concerned during their holidays: intensive language courses are recommended.

Overview

The syllabus constitutes an integrated study with focus on language, culture and society. It fosters a range of transferable skills including communication, critical thinking, research skills and creativity which are valuable to the individual student and to society. Pupils are encouraged to learn in context through engagement with culture by means of authentic media (press, radio, television, Internet).

The topics are closely linked to the countries in which the language is spoken and include:

- Social issues and trends, e.g. family life, youth culture, immigration, integration
- Political and artistic culture, e.g. music and cinema, political commitment, current affairs

In addition, students study two literary works (this can be a book and a film, or two books).

The aims of the syllabus are to:

- develop the ability to understand the target language in a variety of registers
- enable the learner to communicate confidently and clearly in the target language
- develop a comprehensive understanding of a wide range of grammatical structures
- form a sound base of skills, language and attitudes required for further study, work and leisure
- develop insights into the cultures and civilisation of countries where the target language is spoken
- encourage positive attitudes to language learning and a sympathetic approach to other cultures

Assessment outline

Paper 1 Listening, reading, writing Candidates answer comprehension questions in the target language in response to audio and written material. They are also required to translate a passage from English into the target language and vice versa.

Paper 2 Writing Candidates will answer an essay question in the target language for each of the two works they have studied (this can be a book and a film, or two books). Students will have a choice of question on each book/film. All questions will be in the target language and will require a critical and analytical response.

Paper 3 Speaking The speaking test will be in two parts. Part 1 will be the discussion of one sub-theme from those in this specification, and Part 2 will be the presentation and discussion of the student's individual research project, related to the history, current affairs, or culture of the areas of the world where the target language is spoken.

Combination with other subjects

Languages can be combined with any subject as they are useful for a range of undergraduate courses and later careers.

University courses in Modern Languages

Fewer students are studying modern languages beyond GCSE nationally every year. The value of qualifications in foreign languages has been growing correspondingly, particularly as employers are looking for additional areas of expertise when faced with large numbers of applicants for a small number of jobs. Continuing to study one or more modern language is therefore a very attractive option, especially as there is a wide range of degree courses which include the study of languages, apart from language degrees, for example, Law with a language, Economics or Business Studies with a language, or Biochemistry with a language. Degree courses in modern languages will generally require students to have taken the relevant A-Level course. Some languages (i.e.: Mandarin, Italian) can be learnt from scratch at university, as long as an aptitude for language learning is evident.

Music OCR A Level

Requirements

Music (I)GCSE is desirable but not essential. However, some understanding of music history and theory is useful, and the ability to play a musical instrument is critical.

Outline of the course

There are three main elements to the A level course: 1) performing; 2) composing; 3) music theory, history, and analysis.

1: Performing (Choose A or B)

Either

Performing A (25%) – one recorded recital, (10 minutes), of at least two contrasting pieces

Or

Performing B (35%) – one recorded recital, (15 minutes), of at least three contrasting pieces.

Performances may be solo instrument/voice ensemble (including an accompanist), or a realisation using music technology.

2: Composing

Either

Composing A (35%) – two compositions and three technical composing exercises.

Or

Composing B (25%) – two compositions.

3: Written exam (40%)

A 2.5-hour paper involving the analysis and evaluation of music, based on four areas of historical study:

1. Instrumental music of Haydn, Mozart, and Beethoven
2. Popular song: jazz, blues, and big band
3. Programme music, 1820-1910
4. Innovations in music, 1900-present day

The A Level Music course also provides ample opportunity to pursue a wide range of interdisciplinary topics, such as music and philosophy, sociological approaches to music (e.g. music and gender, music and sexuality), music and literature, linguistic and mathematical models of music theory, and music and politics. As such, Music works particularly well with other analytical, essay-based subjects (e.g. English, History, Philosophy). However, a number of students taking STEM-based courses choose Music as an additional subject, to provide a balance much valued by universities and employers.

University courses and careers

Music is available as an academic course at all major universities, and is particularly suitable for students interested in interdisciplinary study and critical thinking. Charterhouse students routinely receive offers from Oxbridge, Durham, KCL, and other similar universities, and there is significantly less competition for places on Music courses than for other arts/humanities subjects. Alternatively, the subject may be studied as a practical discipline (e.g. performing or composing) at a conservatoire or music college. Conservatoire courses will naturally lead to careers in music, whereas a university degree in the subject can lead to a multitude of career opportunities: in a recent survey, the top three career destinations of UK Music graduates were arts/media, business, and public sector work.

Philosophy

AQA A Level

Requirements

No previous study of Philosophy or Religion is required. Successful candidates will have an Enthusiasm for debate and discussion matched by a capacity for analytical and logical thinking, a willingness to engage with abstract, conceptual ideas and a desire to examine philosophical texts first-hand.

Outline of the course

Paper One

Epistemology – Theory of Knowledge

What do we know and how do we know it? Epistemology is about exploring the sources of knowledge in our world – can we trust them? Can we really know *anything* at all? Do physical objects actually exist when we are not perceiving them? Here you consider the big ideas of Descartes, Locke, Russell and Hume.

Moral Philosophy

Here you examine some of the most important ethical theories (Utilitarianism, Aristotelian and Kantian ethics) and how they can be applied to modern issues such as simulated killing (in computer games, films, TV), the treatment of animals, telling lies and theft. How do we decide what is right and wrong is at the heart of this section. Should we have rules (Kant) or base our actions on consequences (Bentham and Mill)? Or should we focus on having a good character (Aristotle)? Our study of meta-ethics takes into the heart of ethical language itself.

Paper Two

Metaphysics of God

This section explores the big questions about the existence of God, the problem of evil and the nature of religious language. Here you get to grips, challenge and critically analyse the reasons why people believe and, indeed, whether they should at all.

Metaphysics of Mind

What do we mean by ‘mind’? The mind-body problem is at the heart of this part of the course. To what extent is the mind separate from the body, or are they the same thing? By considering the dualistic ideas of Descartes, Chalmers’ ‘philosophical zombie’ in contrast with the physicalist approaches of Hempel and Ryle, you will come to an understanding of one of the most important and contentious debates in modern philosophy.

Examination: There are two three hour examinations which consist of a cumulative set of shorter answers followed by extended writing. There is no coursework element.

Combinations with other subjects

This subject complements any other subject, but may particularly appeal to scientists, historians, mathematicians, as well as those studying English literature.

University courses and careers

Pupils interested in Philosophy, Politics, and Economics (PPE) courses, Medicine and Theology at University will find the subject particularly useful. The debating and analytical skills make it an effective preparation for a very wide range of courses and careers.

Physical Education

AQA A Level

Requirements

This is a rigorous and academic course in which any aspects of sport are covered across the two years. It provides a broad spectrum of sporting knowledge that suits all types of learners and their interests. It is not necessary to have studied GCSE in Physical Education to join this course. The specification builds upon, but does not depend upon, knowledge, understanding and skills from GCSE in Biology, Physics and Physical Education.

Outline of the course

The content of the AQA A Level in Physical Education is divided into three sections:

- Anatomy, Physiology and Biomechanics
- Sports Psychology and Skill Acquisition
- Sport and Society

Each section is further sub divided into topic areas.

You will be assessed by two papers at the end of the two-year course and a non-examined assessment.

Paper 1 will cover 3 sections: A two-hour paper (worth 35% of your overall grade)

- Applied anatomy and physiology
- Skill acquisition
- Sport and society

Each section is worth 35 marks and comprises multiple choice, short answer and extended writing questions.

Paper 2 will cover 3 sections: A two-hour paper (worth 35% of your overall grade)

- Exercise physiology and biomechanics
- Sport psychology
- Sports and society and technology and sport

Each section is worth 35 marks and comprises multiple choice, short answer and extended writing questions.

Non-examined assessment: Practical Performance in Physical Activity and Sport (worth 30% of your overall grade)

- Students assessed as a performer or coach in the full sided version of an activity plus a written analysis of performance.

Combinations with other subjects

A level PE can be taken in combination with any other A level subjects, although those taking Biology will naturally find more affinity with the anatomy and physiology elements of the course, and pupils choosing Psychology will enjoy the skill acquisition. It should not, however, be considered a “soft” academic option.

University courses and careers

This qualification is suitable for learners intending to pursue any career for which an understanding of the human body or human behaviour is desirable. This qualification is also suitable for any further study in social sciences, or as part of a course of general education. Other avenues of progression for candidates would include careers in: sport and physical activity, PE teaching, Physiotherapy, Personal training and Sports coaching.

Physics

AQA A Level

Requirements

This course builds on the knowledge, understanding and practical skills that are developed at (I)GCSE. As a result, it is expected that pupils will have taken Physics at this level and gained at least a grade 7 at (I)GCSE level or equivalent. Proficiency in mathematics is also very important and pupils are normally expected to be studying Mathematics as a Specialist too.

Outline of the course

The AQA Physics course is designed to be academically rigorous while offering complementary views of the subject, emphasizing both mathematical reasoning and the historical and philosophical development of the subject. Optional topics are available in the later part of the course. Physics offers much variety: from skillful experimentation to careful mathematical deduction; from studying the atomic nucleus to looking at the structure of the whole universe; the phenomena of everyday life to making sense of things that we cannot see. The Physics covered will provide opportunities for illustrating its use in areas as diverse as medicine, engineering, space exploration, transport, communications, environmental issues and geology. The mathematical requirements are incorporated into the physics, including vectors, computer modelling, logarithms, sinusoidal and exponential functions.

In the First Year, fundamental concepts from (I)GCSE will be built upon, including Mechanics, Materials, Energy, Electricity, Waves and Superposition. Alongside these, new areas such as Particle Physics and introductory Quantum Physics will be introduced, further revealing the beauty of the workings of the universe. The practical element of the course is carefully designed to allow for development of experimental skills and analysis. Computing also plays an important and varied role. Towards the end of the First Year, pupils have an opportunity to develop their interests and communication skills through researching a topic and delivering a presentation to their fellow pupils.

In the Second Year, pupils will extend their understanding of Mechanics via Simple Harmonic and Circular Motion and study in detail a fundamental cornerstone of Physics, that of the Field. Gravitational, Electric and Magnetic Fields will be covered in detail and as the course progresses pupils will discover for themselves the manner in which apparently separate elements of the subject unite to describe a wide range of phenomena. Optional topics cover disciplines such as Astrophysics and Cosmology, Special Relativity and Engineering among others.

Combinations with other subjects

Physics combines well with many subjects, particularly other Sciences, as well as Mathematics, Economics or Geography.

University courses and careers

Physics is highly respected by university admissions officers and is a vital prerequisite to many further academic subjects, as well as many careers. It is required for the Physical Sciences and Engineering. It is useful for Medicine, given the extent of technology used in that field. Financial institutions appreciate the clarity of thought, the numeracy and analysis and modelling skills developed by Physics. Lawyers, too, need colleagues with training in science. Physics has much to offer those who want their futures to be involved with practical ways of helping other people and, equally, those who wish to understand nature in as fundamental a way as possible.

Psychology

AQA A Level

Requirements

No previous study of Psychology is required. The course is well suited to those pupils who have a genuine interest in 'why we do what we do' be it biologically, cognitively or behaviourally. Due to the vast amount of research and theoretical concepts covered, the course is also suited to those pupils who thrive on critical thinking and the application of complex ideas to real life experiences. Psychology is **not** a soft option. We *strongly* recommend that a pupil achieves at least a 7 at GCSE Biology and/or Chemistry and English.

Outline of the course

Paper One

Paper 1 (2hrs, 33.3%) is made up of compulsory content including Social Influence, Memory, Attachment and Psychopathology. The questions are comprised of multiple choice, short answer and extended writing questions.

Paper Two

Paper 2 (2 hrs, 33.3%) is made up of compulsory content including Approaches to Psychology, Biopsychology and research methods. The questions are comprised of multiple choice, short answer and extended writing questions.

Paper Three

Paper 3 (2 hrs, 33.3%), section A is made up of the compulsory Issues and Debates in Psychology content. Section B will assess one topic from Relationships, Gender or Cognition and Development. Section C will assess one topic from Schizophrenia, Eating Behaviour or Stress and Section D will assess one topic from Aggression, Forensic Psychology and Addiction. The questions are comprised of multiple choice, short answer and extended writing questions.

Examination: There are three two hour examinations which consist of multiple choice, short answer and extended writing questions. There is no coursework element.

Combinations with other subjects

This subject complements any other subject, but may particularly appeal to scientists as well as those studying English Literature.

University courses and careers

Due to the broad range of topics covered and skills that are learned, Psychology can facilitate any university course or career. Apart from Psychology and Medical courses, Psychology is extremely useful for any course that studies human behaviour, including Neuroscience and the Biological/Social/ Sports Sciences, as well as Humanities subjects such as History, Anthropology, Politics and Economics.

Politics

Pearson Edexcel A Level

Requirements

Since assessment is based on written papers, containing structured questions and essays, an ability to write clearly in well-structured prose is desirable. The course will appeal to pupils who are interested in debate and those who relish the combination of following global and domestic current affairs with a simultaneous focus on the development of political thought, mainly from the 18th century onwards. Political thought will be studied through a focus on topics ranging liberalism through to conservatism, socialism and anarchism.

Outline of the course

The following aspects of British politics will be studied: representation, participation, citizenship, elections and electoral systems, voting behaviour and the influence of the media, political parties, constitutions and the institutions of government (the legislative, executive and judicial branches). From the beginning of the first year, the course will focus on the key issue of representation in the politics of the United Kingdom, and ideologies such as conservatism, liberalism and socialism: this will allow key links to be made between the direction of contemporary political parties and the beliefs that underpin them. As domestic politics moves away from the era of consensus, this has significant contemporary relevance. Over the two-year course, as far as is possible, topics will be studied to coincide with the political cycle of the United Kingdom. This feature of the course, together with opportunities to listen to visiting speakers at Charterhouse, to attend major party conferences and to visit the seat of government in London, help to bring the subject matter to life and to make it a truly contemporary study of the subject.

Within International Relations, the Second Year Specialists will establish an understanding of the theoretical stances of Idealists and Realists. Pupils will study the significant international organisations and assess their influence. All of these features of learning will be complemented by a series of case studies, which will allow the students to research in detail events and issues of contemporary interest, and also define and rationalise the potentially overwhelming scope of the subject

There is no coursework.

Combinations with other subjects

The course in Politics combines with all subjects offered at Charterhouse. Popular combinations in the past have included Economics, History, English and Languages although the subject can also complement other subjects like Maths and the Sciences due to the analytical nature of the course.

University courses and careers

Politics is regarded as a strong academic subject with pupils going on to pursue a wide range of courses at university, particularly social sciences, History or Law. The study of the key ideologies and institutions will also serve to confirm interest in courses such as PPE and HSPS, although it is not a pre-requisite for application.

The IB Diploma Programme

Group 1: Studies in Language and Literature

Languages A – Literature: English HL and SL

Requirements

The ability and willingness to study literature in English or translated into English is the only requirement: all IB Diploma Programme pupils will study this course.

Outline of the course

The primary aims of the course will be to expose pupils to a diverse range of literary works, including those from other cultures and languages, and to use the study of such works to foster both their personal appreciation of literature and the skilful use of oral and written expression to convey understanding of its methods and concerns. The techniques involved in literary criticism will be honed, focusing on both the ability to examine written text precisely and in depth, and to analyse relationships between different works. The development of these skills should nurture a lifelong love and knowledge of literature.

Such aims match the ranging demands of the syllabus components: close reading skills are essential for the literary analysis required for Paper 1 and the individual oral commentary; comparisons between texts will need to be elucidated for Paper 2. The study of Prescribed Literature in Translation will also require pupils to appreciate different perspectives of people from other cultures, and the impact of the time and place in which a work is written. Of course, the assessment criteria for all examinations prize clear knowledge and understanding, and the use of coherent language to express this, both orally and on paper.

There are some distinguishing features of English A: Literature when compared to A Level. There is the availability of celebrated texts in translation such as *Madame Bovary*, *One Hundred Years of Solitude*, *Anna Karenina*, *The Vegetarian*, *One Hundred Years of Solitude*, *At Night All Blood in Black*, *Perfume*, *Persepolis and Medea*, which, in addition to the choice of English texts, makes this a genuinely international literature course. Unlike the other qualifications, there is also compulsory oral coursework, which forms an interesting and imaginative aspect of the course.

The differences between HL and SL largely come down to an increase in the number of texts studied; the methods for assessment remain almost identical.

Combinations with other subjects

English A: Literature combines appropriately with all other subjects. The study of classical and modern languages provides some overlap with developing the analytical skills necessary for studying literary works, as well as promoting the reading of diverse authors, and the precise and fluent use of language. History is also a popular companion subject for English as another essay writing subject that rewards wider reading and rigorous attention to textual evidence.

University courses and careers

Studying literature may lead to university study in language and literature, either singly or in combination with other arts disciplines. It is an ideal preparation for careers in journalism, law and media but the transferable skills developed through studying English are increasingly valued by recruiters in this digital age in a wide range of fields, including finance and management.

Languages A – Language and Literature: Italian, German and Mandarin

HL and SL

Requirements

This course is intended for pupils who are native speakers, who have Italian, German and Mandarin as either their mother tongue or are bilingual.

Overview

The language and literature course aims to develop critical literacy skills, making students aware of the importance of context in understanding texts and to develop one's power of communication. This includes close reading and textual analysis, as well as speaking and writing in different contexts. The definition of text is very broad, as anything that conveys meaning such as poems, speeches, song lyrics, films, posters, websites, magazine covers, images, tweets or blog entries, to name a few! By 'language', we mean the methods that writers use to construct meaning, including the use of images, colour, lighting, camera angle, headings and, of course, words.

Throughout the course Higher Level students read six literary works and Standard Level students read four literary works, exploring a range of texts, both literary and non-literary, on a range of global issues, such as feminism, racism or war.

The Language and Literature is based upon seven bigger ideas or key concepts that help us to understand and attach meaning to the world:

- identity
- culture
- creativity
- communication
- perspective
- transformation
- perspective

Assessment outline

External assessment

Paper 1: SL: One written commentary on one of two non-literary texts

HL: Two written commentaries on each of two non-literary texts

Paper 2: A comparative essay on two literary texts based on one of four unseen questions.

HL essay: An essay (course work) on a literary or non-literary texts and 'line of inquiry'

Internal Assessment:

Individual oral assessment: A 10-minute oral followed by a 5-minute discussion on two prepared passages chosen by the students: one literary and one non-literary passage connected by a 'global issue' of choice.

Combinations with other subjects

Languages A – Language and Literature combines appropriately with all other subjects. The study of classical and modern languages provides some overlap with developing the analytical skills necessary for studying literary works, as well as promoting the reading of diverse authors, and the precise and fluent use of language.

University courses and careers

The course may lead to university study in communication studies, linguistics, language and literature, either singly or in combination with other arts disciplines. It is an ideal preparation for careers in journalism, law, media and teaching.

Group 2: Language Acquisition

Languages B – French, German, Latin, Mandarin and Spanish

HL and SL

Requirements

Pupils should have had three to five years' exposure to the language before starting on this Specialist course. All pupils studying modern languages at Specialist level are expected to spend time in the foreign country concerned during their holidays: intensive language courses are recommended.

Overview

The course comprises five prescribed themes, allowing students to compare the target language and culture(s) to other languages and cultures with which they are familiar and providing opportunities for students to communicate about matters of personal, local or national, and global interest.

The five prescribed themes are:

- identities
- experiences
- human ingenuity
- social organization
- sharing the planet

The study of two literary works originally written in the target language is a requirement at Higher Level in language B. Higher Level students are expected to understand fundamental elements of the literary works studied, such as themes, plot and characters. Literature is intended as a stimulus for ideas to be explored, principally through oral assessment.

The course aims to advance listening, reading, writing and speaking skills so that pupils understand and use their chosen language in a range of contexts and for a variety of purposes. They will study a wide range of texts written in different styles and for different reasons in order to acquire an understanding of different types of texts and the ability to apply these criteria in their own writing, so that they can respond appropriately.

Apart from developing a command of styles of writing, the material used will at the same time offer insights into different perspectives of people from different cultures. Pupils will also learn to relate their knowledge of the French / German / Mandarin / Spanish language to other areas of knowledge, for example to the ethical implications of scientific advances. They will also be encouraged to use their linguistic knowledge in independent listening, reading and viewing of material in French / German / Mandarin / Spanish to enhance their linguistic skills and to broaden their cultural knowledge and understanding. Their learning experience in class and through their own personal study will also enhance their appreciation of their own culture.

Assessment outline

External assessment

Paper 1: Productive skills – writing

One writing task from a choice of three, each from a different theme, choosing a text type from among those listed in the examination instructions.

Paper 2: Receptive skills – separate sections for listening and reading comprehension

Comprehension exercises on three audio passages and three written texts, drawn from all five themes.

Internal assessment

Individual oral assessment: for SL, a conversation with the teacher, based on a visual stimulus, followed by discussion based on an additional theme. For HL, a conversation with the teacher, based on an extract from one of the literary works studied in class, followed by discussion based on one or more of the themes from the syllabus.

Latin SL and HL

Requirements

Latin is offered at both Standard and Higher Level to pupils who have achieved **at least a grade 7 at GCSE**. Latin may be studied as an alternative to a modern foreign language in Group 2, or as an elective subject in Group 6. The course is run subject to demand.

Overview

IB Latin involves gaining a deeper understanding and appreciation of Latin language and literature by reading a wide range of unabridged texts in the original language. One week you might be studying a vehement law-court attack by Cicero upon a corrupt official or a bitter rival; the next week you might study a tender love-poem or a biting satirical epigram by Catullus. It's the sheer variety which makes Roman literature so fresh and engaging.

There are three parts to the course at SL with an additional component at HL:

Part One: Latin Language (30%)

Pupils are required to demonstrate their knowledge and understanding of Latin language, grammar and vocabulary by translating a passage of unseen Latin verse into English.

SL—Reading comprehension and translation questions based on an unseen extract.

HL—Reading comprehension, translation, and guided analysis questions based on a set of two unseen extracts.

Part Two: Latin Literature (30%)

In this Unit, pupils will read two original texts- a choice of Ovid's love poems, the *Amores* or Virgil's *Aeneid* // for verse and either Cicero's *Pro Caelio* or a selection from Livy's early history of Rome for prose. Pupils develop the skills needed to show knowledge, understanding and appreciation of Latin texts within their literary, social and historical contexts. Pupils will have to show their detailed understanding of the texts by answering comprehension and translation questions. In addition, they will develop their understanding of Latin literary techniques, and will produce personal responses to the Latin texts.

Part Three: Research Dossier (20%)

Pupils will also work over the two year course on an annotated collection of seven to nine source materials relating to a topic in classical history, literature, language, religion, mythology, art, archaeology of the pupil's own choosing. The Research Dossier allows the pupil to specialize and study an aspect of the classical world that really interests them and is introduced by a further source that captures the inspiration of the line of enquiry. The final dossier is internally assessed and externally moderated.

Part Four: (HL only): Prose composition (20%) This new unit is an innovative foray into the assessment of the active use of Latin as well as an opportunity for students to practice with the tools and methods of classical philologists.

What Universities say about IB Latin:

"In studying classical languages, a student is introduced to the many facets of civilizations which produced and examined literature, philosophy, art, science, and mathematics. Classical languages challenge students to sharpen their analytical skills by studying the nuances of an ancient language and by developing an appreciation for other cultures and for beauty in literary expression. For these reasons, Brown University supports the study of classical languages."

– Director of Admission, Brown University

Italian and Mandarin ab initio

SL (only)

Requirements

The ab initio course is designed for students with no previous experience of the language.

Outline of the course

Pupils will be given a thorough basic grounding in vocabulary and grammar according to the prescribed list of topics and linguistic structures in the syllabus. The course will be based on three fundamental areas: language, themes and texts; these will, where possible, be interconnected and studied concurrently. An element of intercultural understanding will be introduced through the links between the three elements. Throughout the course, pupils will be taught to understand, interpret meaning in and respond to a variety of spoken, written and visual texts. The initial emphasis will be on developing sufficient confidence linguistically to enable pupils to produce language spontaneously and to be able to tackle texts confidently. Pupils will be encouraged to develop confidence in the use of the language and the ability to communicate clearly their ideas in the target language. During the ab initio course, the pupils will become familiar with the everyday life and cultures of the countries in which the language is spoken.

The course comprises five prescribed themes, allowing students to compare the target language and culture(s) to other languages and cultures with which they are familiar and providing opportunities for students to communicate about matters of personal, local or national, and global interest.

The five prescribed themes are:

- identities
- experiences
- human ingenuity
- social organization
- sharing the planet

Assessment outline

External assessment

Paper 1: Productive skills—writing

Two written tasks of 70–150 words each from a choice of three tasks, choosing a text type for each task from among those listed in the examination instructions.

Paper 2: Receptive skills—separate sections for listening and reading comprehension

Comprehension exercises on three audio passages and three written texts, drawn from all five themes.

Internal assessment

Individual oral assessment: a conversation with the teacher, based on a visual stimulus and at least one additional course theme.

Combination with other subjects

Languages can be combined with any subject as they are useful for a range of undergraduate courses and later careers.

University courses in Modern Languages

Degree courses in modern languages will generally require students to have taken the relevant Language B HL course. The ab initio course is useful in demonstrating a pupil's ability to grasp new languages and linguistic structures: some languages (i.e.: Mandarin, Portuguese) can be learnt from scratch at university.

Group 3: Individuals and Societies

Business and Management HL and SL

Requirements

There is no requirement to have studied business before taking this subject as part of the IB Diploma Programme. A serious interest in business combined with strong writing and numeracy skills are desirable as is an interest in commercial and current affairs.

Outline of the course

Business Management is a rigorous, challenging and dynamic subject, offering a holistic view of the world of business that encourages pupils both to think critically about individual and organisational behaviour, as well as to explore global and local business issues, so that pupils know how different cultural perspectives influence business decision-making. The course focuses on the main functional areas of business: marketing; accounting and finance; operations; and human resources. These topics reflect the core of the course and their integration contributes strongly to its holistic nature. Business Management also covers management processes and decision making against a backdrop of strategic uncertainty due to economic, social and political change. The interaction of individuals and groups within an organisation are very important; pupils will learn how they can be successfully managed and ethically optimised; the subject is very well placed within the individual and societies area of the IB Diploma.

HL and SL differ in breadth and depth of the coverage, affecting the scope of the assessment.

HL and SL:

Paper 1: Case study

Responses to a pre-released case study, followed by questions based on additional and related stimulus materials.

Paper 2: Quantitative focus

Questions based on stimulus material.

Written Commentary

HL - Pupils will be expected to complete a business investigation which will represent 25% of their total mark and will be internally assessed and externally moderated by the IB. Pupils will undertake an individual, independent investigation into a business problem faced by an existing small/medium sized business. The organisation may be a sole trader, partnership, or small private limited company. Investigations into a Public Limited Company will not meet the criteria.

SL - Pupils will be expected to produce a written commentary based on three to five supporting documents about a real issue or problem facing a particular organisation.

Combination with other subjects

Business and Management can be linked successfully with almost all other areas of study. However, because Business and Management as well as Economics contain an overlap in content, they are not able to be taken together as two HL courses, but can be combined with one studied at HL and the second study at SL.

University courses and careers

The subject provides an excellent introduction to the study of Business and / or Management at degree level and is an ideal preparation for a wide range of careers.

Economics

HL and SL

Requirements

The key to a good result in IB Economics at both HL and SL is that pupils should be able to think logically. An interest in current affairs, an appreciation of differing international perspectives and the ability to communicate these with others are also essential.

It is not necessary to take any particular level of Mathematics as part of the IB Diploma Programme. However, those thinking of taking Economics at university should take Mathematics HL as this is often the requirement for entry to study Economics at the best universities.

Outline of the course

The subject is taught in a discursive manner so that those who read newspapers, watch the news and have an international mind-set will find it most interesting. There is a strong emphasis on the international perspective and pupils must be willing to consider economic theory from beyond the British perspective. A wide range of ideas and theories are covered in both the HL and SL courses and the ability to bring these together and then apply them to real events from around the globe is essential to success.

The syllabus is divided into four sections for both HL and SL students: Microeconomics, Macroeconomics, International Economics and Development Economics. Microeconomics covers the fundamental economic question of scarcity of resources, how the free market works (supply and demand), how markets fail, and what governments can do to make the economy more efficient. Macroeconomics considers the performance of the national economy and government policies to manage the economy. International Economics involves looking at the benefits of international trade, the issues surrounding protectionism and also exchange rates. Development Economics considers what factors contribute to economic development.

The exam for SL students will involve short essays (Paper 1) and data response questions (Paper 2). HL candidates have to sit Paper 1 and Paper 2 and also sit a third paper which examines HL only content using both short answer questions and an essay. Both SL and HL have to complete a coursework portfolio of commentaries on news articles.

Combination with other subjects

Economics will work well with a wide range of other subjects and especially those with subjects that require logical thought and/or an appreciation of the wider world. Carthusians have most commonly had success linking Economics with Mathematics, Physics and Chemistry. Those pupils more interested in the humanities, will find that Geography and History will support their understanding of Economics. However, because Economics as well as Business and Management contain an overlap in content, they are not able to be taken together.

University courses and careers

Careful research of university entry requirements for IB Diploma Programme Mathematics courses is encouraged for those candidates who seek to study Economics at university.

Evidence of ability in languages, coupled with a good understanding of Economics will prove very attractive to both universities and employers.

As well as going on to study for first degrees in Economics, many Carthusians use their acquired knowledge to enter fields such as accountancy, law, business, information technology and political science, or use it as a basis for studying Modern History or Geography.

Geography

HL and SL

Requirements

It is not necessary to have studied Geography before taking the subject as part of the Diploma Programme.

Overview

Geography – studying the Earth’s surface features and related human activity – has a vital place in the 21st century curriculum. The subject helps us to understand our own lives in a “global world” and face vital issues such as climate change, the “war on terror”, water, energy and food security and the eradication of poverty.

Geography offers fascinating insights into the way human and physical processes interact. We hear every day that the world is short of space and that human beings are placing greater and greater demands on the Earth and its systems. However, what causes droughts, floods or hurricanes? Are they “natural phenomena” or the result of human activity? Geography gives us the language and techniques to approach these questions with confidence. By studying real people in real places, Geography shows how daily lives are shaped by local circumstances – not only the physical characteristics of the place, but also the social, cultural, economic and political opportunities and constraints. Geography shows how each local place exists in a regional, national, international and global context.

This is a practical subject, teaching skills young people need across the school curriculum, at home and at work. Geography students learn about map use (including GIS), data analysis, problem solving and ICT. They find out how to work alone and in teams. They work directly in the real world – in “fieldwork”. They gain an awareness of social and environmental responsibility.

Part 1: Geographic Themes (3 for HL, 2 for SL)

Food and health Urban environments Freshwater – drainage basins Oceans and coastal margins
Extreme environments Geophysical hazards Leisure, sport and tourism

Part 2: Geographic Perspectives – global change (HL & SL)

Population distribution – changing population Global climate – vulnerability and resilience
Global resource consumption and security

Part 3: Geographic Perspectives – global interactions (HL only)

Power, places and networks Human development and diversity Global risks and resilience

Part 4: Fieldwork Project

Pupils undertake one piece of fieldwork related to one of the themes above (maximum 2500 words). Fieldwork is an essential part of the course, promoting the pursuit of a wide range of key skills, including statistical analysis and the use and interpretation of GIS information. It takes place in the local area and during one residential trip, planned to be in North Yorkshire in the middle of the course (5 days). In addition, it is hoped that Specialists will be offered the opportunity to join an optional overseas field trip during their two year course with potential locations being the USA, Switzerland and Namibia.

University courses and careers

Geography complements a variety of other subjects, both arts and sciences and, ideally, in an IB Diploma Programme course, it would be combined with subjects such as Economics as well as Biology. A qualification in Geography is well-regarded and, as a result, can pave the way to a wide range of courses at university.

Global Politics

HL and SL

Requirements

It is not necessary to have previously studied Politics when taking the subject as part of the IB Diploma Programme. What is expected is an interest in the recent developments of key issues such as international relations, terrorism and human rights. An enjoyment of reading about current affairs, and a willingness to learn the theoretical benchmarks that underpin those events will be essential to success.

Overview

The IB Diploma Programme Global Politics course at Charterhouse focuses on contemporary politics in a global context, with particular emphasis on the common theme of “people, power and politics”. The reach of this course is exceptionally broad, but will provide opportunities to establish in-depth understanding of the apparatus of international relations; the tension between human rights and state authority; and the knife-edge upon which the difference between peace and war often resides: all of these topics will be explored within the changing canvas of contemporary events.

Core topics for both HL and SL include: power, sovereignty and international relations; human rights; development; and peace and conflict.

In addition, HL pupils are also required, through a case studies approach, to explore two HL extension topics which will be chosen from the following: environment; poverty; health; identity; borders; and security.

All HL and SL pupils will undertake an engagement activity: this is possibly the most exciting element of the course because it encourages active involvement with a political process, ranging from a local pressure group campaign through to observation of an international war crimes trial, for example.

University courses and careers

Politics is exceptionally useful for pupils considering university courses because it encourages pupils in the subject to be both discursive and engaged with the world around them. Many will go on to study Politics at undergraduate level, but some will opt for related disciplines such as Law, PPE or HSPS.

History

HL and SL

Requirements

It is not necessary to have studied History before taking the subject as part of the IB Diploma Programme. What is needed is an interest in the past, an enjoyment of reading, and a willingness to learn the skills associated with writing creatively and analytically.

Outline of the course

The IB Diploma Programme History course at Charterhouse focuses on aspects of World History in the twentieth century. At HL and SL, pupils will study two twentieth century world history topics. One covers the origins and development of authoritarian and single-party states, with particular reference to Italy under Mussolini and China under Mao. The other topic is a history of the causes and effects of war. In addition, pupils will study the prescribed topic, The Move to Global War. In addition, HL pupils will also study European History from 1855 to 1939, focusing on: Imperial Russia (1855-1924), the Origins and Course of World War One, and European States in the inter-war years.

HL and SL

Paper 1: *The Move to Global War* (1 hour)

Four short-answer/structured questions based on source material.

Paper 2: *Authoritarian States and the Causes and Effects of C20th Wars* (1 hour 30 minutes)

Two extended-response questions.

Internal assessment

Historical investigation on the Vietnam War.

HL only

Paper 3: *Aspects of the History of Europe* (2 hours 30 minutes)

Three extended-response questions.

Combinations with other subjects

History combines well with almost any other subject because it requires both the empirical skills of science and the creative imagination of the arts.

University courses and careers

History is one of the most versatile departure points for pupils considering university courses. Many of our pupils go on to study History at undergraduate level, but some will opt for related disciplines such as Law or PPE. Even those moving into unrelated areas will find that the intellectual skills fostered by the study of History – the ability to analyse, explore and communicate in a clear yet interesting way – will be profoundly useful.

Philosophy

HL and SL

Requirements

It is not necessary to have studied Philosophy before taking the subject as part of the IB Diploma Programme. What is needed is desire to explore and discuss issues of contemporary relevance to the modern world and to reflect on those in relation to our own human state.

Outline of the course

Philosophy is the inquiry into the profound and challenging questions such as: “Do we have free will?” and “What is it to be human?” It seeks to develop key transferable skills including the ability to formulate sophisticated arguments about abstract issues and to evaluate complex ideas. The course will introduce students to key thinkers from the past, but the emphasis is also on encouraging pupils to engage in philosophical thinking themselves. Pupils are encouraged to reflect on their own experiences, assumptions, and ideological perspectives, as well as to apply their philosophical knowledge to the world around them.

The course comprises a core theme called “Being Human” in which pupils explore what it is to be human through six key concepts such as identity, mind & body and personhood. For example, pupils will consider what sets humans apart from other species, and whether animals or machines could be considered persons.

There are two additional themes of study for HL and one additional theme for SL: these will be Ethics and Philosophy of Religion. In Ethics pupils explore the nature of moral values and moral language; how we should decide what is right and wrong in any situation; and applied ethics, including issues surrounding biomedical ethics, the environment, and wealth. In the Philosophy of Religion component, pupils investigate questions about the nature and existence of God, religious language and aspects of religious experience and behaviour. Questions that are asked include the following: “Can we prove the existence of a higher being?” and “Could religion be purely a social phenomenon?”.

The prescribed text part of the course gives pupils the opportunity to gain an in-depth knowledge of an important philosophical text. There is also a Higher Level extension requiring the exploration of the nature of philosophical activity itself and this gives pupils the opportunity to explore their experience of “doing philosophy” and the methods employed. Both Higher Level and Standard Level pupils must also complete an internal assessment requiring a philosophical analysis of a non-philosophical stimulus.

Combinations with other subjects

Philosophy is successfully combined with almost all other subjects; scientists as well as artists have studied Philosophy with pleasure and success. Some of the thinking required in the course will link with Theory of Knowledge, although it should be noted that the two courses of study are not the same thing.

University courses and careers

This subject, when studied at Higher Level is a particularly relevant preparation for studying Philosophy, Theology and Religious Studies at university, but the wide range of skills and concepts involved in this flexible subject make it an effective preparation for all humanities and many of the social sciences. Past pupils have studied a wide range of courses at university and pursued a variety of careers such as the Law, Management Consultancy, Business and Research.

Psychology

HL and SL

Requirements

The course is well suited to those students who first and foremost have a genuine interest in 'why we do what we do' be it biologically, cognitively or behaviourally. Due to the vast amount of research and critical thinking, the course is also suited to those students who thrive on making links and justifying decision and/or behavioural consequences. Psychology is **not** a soft option. We *strongly* recommend that a student achieves at least a 7 at GCSE Biology and/or Chemistry and English – this is an essay based subject. Fundamentally, learners who are inquisitive, creative and happy to challenge themselves and their teachers academically, will succeed on this course.

Outline of the course

The course is a demanding yet exciting and comprises of both core and option modules. The examination is set over three papers plus an Internal Assessment (coursework). Psychologists employ a range of research methods, both qualitative and quantitative, to test their observations and hypotheses. DP psychology promotes an understanding of the various approaches to research and how they are used to critically reflect on the evidence as well as assist in the design, implementation, analysis and evaluation of the students' own investigations. Surrounding the approaches and the options are the overarching themes of research and ethics.

Syllabus component

- Biological approach to understanding behaviour
- Cognitive approach to understanding behaviour
- Sociocultural approach to understanding behaviour
-

Options

- Abnormal psychology
- Health psychology

Internal assessment (coursework)

- Experimental study

Assessment outline

Paper 1 (40%) Three short answer questions on the core. One essay from a choice of three on the biological, cognitive and sociocultural approaches.

Paper 2 (20%) Two questions; one each from a choice of three on two options.

Paper 3 (20%) Three short answer questions on approaches to research.

Internal Assessment (20%) Experimental study: A report on an experimental study undertaken by the student.

University courses and careers

Due to the broad range of topics covered and skills that are learned, Psychology can facilitate any university course or career. Apart from Psychology and Medical courses, Psychology is extremely useful for any course that studies human behaviour, including Neuroscience and the Biological/Social/Sports Sciences, as well as Humanities subjects such as History, Anthropology, Politics and Economics.

Group 4: Experimental Sciences

Biology HL and SL

Requirements

IB HL Biology will suit high-performing pupils who have a demonstrable track record of achieving highest grades in Biology and Chemistry at GCSE/IGCSE level. For pupils wanting to study IB SL Biology, it is not essential that they have studied GCSE/IGCSE Biology and Chemistry, IBMP, or equivalent. An IBDP Biologist should be intellectually curious, organised, independent, creative, collaborative and capable of applying their knowledge in a variety of unfamiliar contexts.

Outline of the course

Studying Biology as part of the IBDP brings a principled, practical and scientific approach to the subject. The specification includes a broad and modern topic spread, including cell and molecular biology, animal and human anatomy and physiology, metabolism, genetics, DNA, ecosystems and human impacts, biodiversity and plant biology. The interaction with the Theory of Knowledge programme brings a questioning, empirical approach to its study. It also explores the application of knowledge in global society taking in the moral, ethical and economic issues arising.

The development of experimental and investigative skills is a key aim of Collaborative Sciences Project. There is a large practical component, with a quarter of the time allocated to experimental work. Both HL and SL biologists undertake a field course where they perform their Independent Investigation.

Both HL and SL courses have a core syllabus giving a broad subject overview (cell biology, organisation and function of human organ systems, molecular biology, evolution). Pupils studying HL Biology explore additional concepts, emerging themes and cutting-edge advances in much greater detail.

The HL course is a rich, immersive, engaging, wide-ranging and challenging scientific course which is an excellent preparation for any biological sciences course at university, medicine, dentistry, veterinary, environmental sciences and conservation. Pupils who succeed in HL Biology take ownership of their learning and enjoy pushing academic boundaries further.

The SL course is a broad and fascinating course and, pupils who undertake SL Biology find it rewarding, fulfilling and achievable.

Combinations with other subjects

Chemistry complements the molecular biology topics in both Biology HL & SL. Geography complements Biology SL particularly well due to the study of the additional Ecology topics looking at climate change, conservation and human impacts on ecosystems. The requirements to analyse and interpret experimental data will be assisted by the IBDP learner's mathematics course.

University courses and subject combinations

Biology HL (along with Chemistry HL) is highly recommended for all Medicine, Biomedical and Veterinary Medicine courses. It is often a preferred subject for entry to Biochemistry, Natural Sciences and Environmental Sciences courses, particularly those leading to careers in research.

Biology SL gives IBDP learners an excellent grounding in a mainstream science that is highly valued by university admissions officers.

Chemistry

HL only

Requirements

Although the IB Diploma Programme does not officially require prior knowledge to take Chemistry HL, it is advisable that pupils have gained a high grade the subject at (I)GCSE or as part of the IB MYP.

Outline of the course

IB Chemistry is a pre-university course that allows its graduates to fulfil national (UK) and global requirements for university admission, but it goes far beyond this nevertheless important element of the programme. As an experimental science, it provides opportunities for students to acquire the knowledge and skills needed to become an active problem solver and compassionate team worker. Chemistry not only gives pupils the opportunity to explore novel concepts and ideas but, by the very nature of a science, they will encounter opportunities to develop their innate curiosity and encourage their thinking about the make-up of our world.

The course is designed to introduce pupils to one of the major experimental sciences and aims to instill a love and passion for Chemistry. At the same time, it serves as a springboard for further study at tertiary level. The syllabus is divided into theory and practical work. The subject will be taught with a view to providing a solid foundation in the basics of chemistry followed by the introduction of specific and factual material. The four main pillars of inorganic, organic, physical and analytical chemistry will be covered in a sensible order that allows for seamless transitions between them. It is important that Chemistry is seen as one homogenous subject in which each of the four pillars plays its part towards the whole. Assessment is through a combination of internal exams at the end of each Quarter, terminal written exam papers, assessed practical work throughout the two years and the Group 4 Project. The chemistry course also places some emphasis on the relationship of chemistry with its sister sciences and incorporates epistemological considerations inherent in both the subject and the sciences in general.

Chemistry HL demands the study of one option course (consisting of core and additional material) which is assessed in Paper 3 of the final examination. Each pupil may answer questions in any one of the four options approved by the IBDP.

Experimental and investigative work:

The study of Chemistry necessarily contains a strong practical element. The IB emphasises an applied approach to experimenting and thus seeks to develop personal skills of cooperation, perseverance and responsibility: experiments promote the manipulative skills necessary to carry out investigations with precision and safety. Such an emphasis enables pupils to apply and use a body of knowledge, methods and techniques that characterize science and technology within a global context. To this end, pupils will learn experimental techniques in great depth.

The Group 4 Project is a collaborative, multidisciplinary activity which is designed to bring together the various scientific disciplines and encourage a mutual understanding of them. The work conducted in the Group 4 Project will particularly foster a sense of responsibility, risk-taking and good communication between the team members.

Combination with other subjects

Chemistry HL is offered only as a Group 6 Elective which allows for the study of another science in Group 4 at HL or SL.

University courses and careers

Chemistry plays a vital part in the newly emerging fields of molecular biology, bio-organic, bio-inorganic chemistry, nanotechnology and biotechnology.

Environmental Systems and Societies

SL only

Requirements

Environmental Systems and Societies is a SL course, accessible to learners from a wide variety of educational backgrounds – although a foundation of knowledge at (I)GCSE or equivalent in science is highly desirable. Some competency in mathematics is a prerequisite: numeracy is even more important. Above all, an interest in global, regional and local ecological and environmental issues, and the ways they can be managed, is absolutely vital.

Outline of the Course

The ecosystem is the unifying concept of this course, as it is through the understanding of how these systems function and interact that the critical interface between people and the physical environment can be addressed. Key topics include:

- Foundations of environmental systems and societies
- Ecosystems and ecology
- Biodiversity and conservation
- Water and aquatic food production systems and societies
- Soil systems and terrestrial food production systems and societies
- Atmospheric systems and societies
- Climate change and energy production
- Human systems and resource use

Learning in this course is both theoretical and practical – the practical work being undertaken both in the laboratory and in the field. Among other things, pupils will explore coppiced woodlands and ancient wood pastures, trap moths, search for endangered species, and construct physical analogues of terrestrial and aquatic ecosystems under laboratory conditions.

Becoming knowledgeable about environmental systems and the way that we engage with them embodies the IB's aspiration for learners to become internationally-minded young people, aware of and ready to contribute to their shared guardianship of the planet.

Environmental Systems and Societies is a vibrant, exciting, transdisciplinary subject which ties together huge elements of both social and physical sciences, in a contemporary and socially relevant context.

Combinations with other subjects

This is a highly accessible and flexible subject that can be combined effectively with any other.

University courses and careers

A wide range of courses in Environmental Sciences and allied disciplines now exists at universities. More traditional Geography courses may also be accessed by studying Environmental Systems and Societies. It is fair to say that those with aspirations towards, for example, Engineering or Medicine should not see this course as a replacement for a traditional science subject.

Physics

HL and SL

Requirements

Experience suggests that pupils should have previous experience of Physics and a grade 7, 8 or 9 at (I)GCSE prior to embarking on the Standard Level course. For those considering studying Physics at Higher Level, a grade 8 or 9 at GCSE or equivalent should be considered compulsory. The course builds on the knowledge, understanding and practical skills that are developed in (I)GCSE or the IB Middle Years Programme. Proficiency in mathematics is also very important and students should consider studying Mathematics HL with Physics HL.

Outline of the Course

The study of IB Diploma Programme Physics offers much variety: from skillful experimentation to careful mathematical deduction; from studying the atomic nucleus to looking at the structure of the whole universe; from designing new devices of practical use to inventing new ways of imaging the world; from explaining the simple phenomena of everyday life to making sense of things never seen. The physics covered will provide opportunities for illustrating its use in areas as diverse as medicine, engineering, space exploration, transport, communications, environmental issues and geology. The mathematical requirements are incorporated into the physics: areas covered include vectors, logarithms, sinusoidal and exponential functions.

Pupils studying Physics as their Group 4 subject at HL or SL undertake a common core, internal assessment and some common modules within the options studied. The difference between HL and SL is one of breadth and depth: where HL students study some topics in greater depth, they also study additional topics and extension material of a more demanding nature. Many skills are developed at both levels including critical thinking and analysis. Aspects of the Theory of Knowledge and the international nature of physics will also be emphasized during the course.

Core topics for both HL and SL include: Mechanics, Thermal Physics, Oscillations and Waves, Electric Currents, Fields and Forces, Atomic Nuclear Physics, Energy, Power and Climate Change and some Astrophysics. Additional HL topics will include: Motion in Fields, Thermal Physics, Wave Phenomena, Electromagnetic Induction, and Quantum. HL topics will also include Special Relativity and Quantum Mechanics!

Laboratory work will be conducted throughout the course to support the above topics but will also be structured in ways to support the required internal assessment which provides opportunity for pupils to undertake an investigation of their own choice into a physical phenomenon or system of interest. The pupils will choose their own topics with appropriate guidance from the subject teachers involved.

Combinations with other subjects

Physics combines well with many subjects, particularly other sciences, including Mathematics, Economics or Geography.

University courses and careers

Physics is much respected by university admissions officers and is a vital prerequisite to many further academic subjects as well as many careers. It is usually required for the Physical Sciences and Engineering.

Group 5: Mathematics

Mathematics: Analysis and Approaches

HL and SL

Requirements

Mathematics: analysis and approaches at HL and SL is appropriate for students who enjoy developing their mathematics to become fluent in the construction of mathematical arguments and develop strong skills in mathematical thinking. They will also be fascinated by exploring real and abstract applications of these ideas, with and without the use of technology. Students who take Mathematics: analysis and approaches will be those who enjoy the thrill of mathematical problem solving and generalisation.

The HL variant of this course is highly demanding and suitable only for those students who are likely to achieve the equivalent of a high grade 9 in IGCSE Mathematics. It requires highly developed algebra skills and a fluency with graphs, functions and geometry.

The SL variant of this course is more accessible but nevertheless students should be comfortable with the algebraic manipulations that are typically found in IGCSE Mathematics. The SL variant of this course could be taken by students who are confident of achieving the equivalent of a grade 8 or higher in IGCSE Mathematics.

Outline of the course

The HL and SL variants of this course cover a range of topics in the following areas:

Number and algebra, functions, geometry and trigonometry, statistics and probability, calculus

The SL course devotes roughly the same amount of time to each of these five areas whilst the HL course spends a greater proportion of its time on geometry and trigonometry, and calculus.

Exam questions in this subject tend to have a variety of styles, some relying on the use of technology (the graphical calculator) to solve problems in a neat way, with others requiring a more traditional handwritten algebraic approach. One skill the student will learn is being able to judge which method is appropriate.

The students taking this course will be assessed in the following way:

SL and HL

Paper 1 (SL and HL): a non-calculator paper consisting of short and extended response questions.

Paper 2 (SL and HL): a calculator paper consisting of short and extended response questions based.

Paper 3 (HL only): a calculator paper consisting of extended 'problem-solving' type questions.

In addition, all students undertake a piece of coursework allowing them to explore a mathematical area of their choice. The subsequent written report will allow them to demonstrate clear communication strategies and is worth 20% of their final mark.

Combinations with other subjects

Mathematics: analysis and applications provides excellent support for all Group 4 courses (in particular Physics) as well as Economics.

University courses and careers

This subject is aimed at students who will go on to study courses with substantial mathematical content such as Mathematics itself, Engineering, Physical Sciences, or Economics for example. The general rule is that the HL variant should be taken whenever A-level Mathematics is a prerequisite for the course the student has in mind. However, we teach an additional course as part of the SL Mathematics meaning pupils studying this qualify for the German *Abitur*.

Mathematics: Applications and Interpretation

HL and SL

Requirements

Mathematics: applications and interpretation HL and SL is appropriate for students who are interested in developing their mathematics for describing our world and solving practical problems. They will also be interested in harnessing the power of technology alongside exploring mathematical models. Students who take Mathematics: applications and interpretation will be those who enjoy mathematics best when seen in a practical context.

The HL variant of this course is highly demanding and suitable only for those students who are likely to achieve the equivalent of a grade 9 in IGCSE Mathematics and have well developed problem-solving skills. Students require the ability to interpret complex worded questions, express them in mathematical language, and solve them, meaning a broader skill set is required than for the alternative HL course, Mathematics: analysis and approaches.

The SL variant of this course is more accessible and to some extent a continuation of IGCSE Mathematics. Nevertheless, there are a handful of more difficult concepts present and students wanting to take the SL variant of this course ought to be confident of achieving the equivalent of a grade 7 or higher in IGCSE Mathematics.

Outline of the course

The HL and SL variants of this course cover a range of topics in the following areas:

Number and algebra, functions, geometry and trigonometry, statistics and probability, calculus

The SL course devotes the majority of its time to the areas of functions, and statistics and probability. The emphasis throughout the SL course is on the use of technology (the graphical calculator) to see and explore the mathematical patterns and ideas that are present. The HL course on the other hand will require greater mathematical insight on the part of the student to understand how to use technology in the right way, to solve demanding mathematical problems.

The students taking this course will be assessed in the following way:

Paper 1 (SL and HL): a calculator paper consisting of short response questions.

Paper 2 (SL and HL): a calculator paper consisting of extended response questions.

Paper 3 (HL only): a calculator paper consisting of extended 'problem-solving' type questions.

In addition, all students undertake a piece of coursework allowing them to explore a mathematical area of their choice. The subsequent written report will allow them to demonstrate clear communication strategies and is worth 20% of their final mark.

Combinations with other subjects

Mathematics: applications and interpretation provides excellent support for all Group 4 courses (in particular Biology) as well as Economics.

University courses and careers

This subject is aimed at students who will go on to study courses such as Social Sciences, Natural Sciences, Statistics, Business, some Economics, Psychology, and Design, for example. The general rule is that the HL variant should be taken whenever A-level Mathematics is a prerequisite for the course the student has in mind. However, we teach an additional course as part of the SL Mathematics meaning pupils studying this qualify for the German *Abitur*.

Group 6: Arts and Electives

Visual Arts (Option A)

HL and SL

Requirements

It is possible to study Visual Arts without having been formally taught an academic course in art. However, a creative impulse and a desire to develop that in a variety of media are essential.

Outline of the course

Pupils will explore painting, drawing, printmaking, sculpture, textiles, photography and film. They will then relate this to broader personal ideas and cultural issues. The investigation work is recorded in workbooks that involve independent contextual and critical investigation. From the basis of enquiry-based learning, pupils will be set individual practical and critical tasks requiring pupils to research, experiment and present ideas practically. This approach is central to the experimentation with materials, feeding into practical work, sketchbooks and portfolios during lesson time in Studio and furthered through seminars and presentations. Regular visits to exhibitions at home and abroad are encouraged. Visits to art galleries in the USA, Europe and London are examples of trips taken by past pupils.

The Core consists of three equal interrelated areas:

- *Visual arts in context*

Through the visual arts in context area, the students will investigate work from a variety of cultural contexts and develop increasingly sophisticated, informed responses to work they have seen and experienced.

- *Visual arts methods*

Through the visual arts methods area, students will:

- understand and appreciate that a diverse range of media, processes, techniques and skills are required in the making of visual arts, and how and why these have evolved
- engage with the work of others in order to understand the complexities associated with different art making methods and use this inquiry to inspire their own experimentation and art-making practice

- *Communicating visual arts*

Through the communicating visual arts area, students will:

- understand the many ways in which visual arts can communicate and appreciate that presentation constructs meaning and may influence the way in which individual works are valued and understood
- produce a body of artwork through a process of reflection and evaluation and select artworks for exhibition, articulating the reasoning behind their choices and identifying the ways in which selected works are connected.

External assessment

Comparative study 20% Students will compare different artworks by different artists. This independent critical and contextual investigation explores artworks, objects and artefacts from differing cultural contexts. The works selected for comparison and analysis should come from contrasting contexts (local, national, international and/or intercultural).

Process portfolio 40% Students submit carefully selected materials which evidences their experimentation, exploration, manipulation and refinement of a variety of visual arts activities during the two-year course.

Internal assessment This task is internally assessed by the teacher and externally moderated by the IB moderator at the end of the course.

Exhibition 40% Students at HL submit for assessment a selection of resolved artworks from their exhibition. The selected pieces should show evidence of their technical accomplishment during the visual arts course and an understanding of the use of materials, ideas and practices appropriate to visual communication. Students will curate their own exhibition of up to 12 artworks which is supported by a curatorial statement.

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