LONDON ACADEMY OF EXCELLENCE

TOTTENHAM

The Place for Academic Rigour

HEADTEACHER'S WELCOME

It is my pleasure to welcome you to the London Academy of Excellence Tottenham. The mission of our school is a simple one - to provide students with a first class academic education in the heart of Tottenham. To support this, LAE Tottenham is proud to have the backing of our principal educational sponsor, Highgate School. Alongside Highgate, we have developed an ethos that focuses primarily on outstanding academic achievement, but also prioritises the development of young peoples' skills and personal qualities thereby supporting them to make a positive contribution to society.

Students at LAE Tottenham study a curriculum made up of facilitating or hard A-Level subjects, giving them the opportunity to aim for the very best destinations for university and employment. The expertise shared through Highgate and our eight other partner schools aims to break down all barriers to top class higher education, regardless of the background of our students, ensuring that students not only gain a place at a top university, but feel that they belong when they arrive.

We are also extremely fortunate to receive significant support from Tottenham Hotspur Football Club, including a state of the art school building adjacent to the new Tottenham Hotspur stadium the centre of regeneration in the North Tottenham area.

Furthermore, our independent partner and supporter schools - Alleyn's, Chigwell, Haberdashers' Aske's Boys', Harrow, John Lyon, North London Collegiate, Mill Hill and St Dunstan's College, offer departmental support, CPD, expertise and shared student experiences, developing the cultural capital and intellectual confidence of our students.

I am hugely excited about the opportunities that LAE Tottenham offers and look forward to welcoming the next set of prospective parents and students over the coming months.

Jan Balon
Headteacher

2020 A-LEVEL RESULTS

- Over 2/3 to Russell Group universities
- 11 students to Oxford or Cambridge
- 13 students on medicine, veterinary science or dentistry courses
- 41% of students to **global** top 100 universities including King's College - 13; Imperial - 10; Manchester - 9; Warwick - 8; UCL - 7; Oxford - 6; Nottingham - 6; Cambridge - 5

LONDON ACADEMY OF EXCELLENCE TOTTENHAM
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Name: Andre ED

University: University of Cambridge (Corpus Christi)

University Course: History

Former Secondary School: Aylward Academy

LONDON ACADEMY OF EXCELLENCE TOTTENHAM
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Name: Tasfia C

University Course: Medicine

University: Imperial College London

Former Secondary School: Broomfield School

LONDON ACADEMY OF EXCELLENCE TOTTENHAM
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Name: Gulizer B

University Course: Chemistry

University: University of Oxford (Lady Margaret Hall)

Former Secondary School: Hornsey School For Girls

LONDON ACADEMY OF EXCELLENCE TOTTENHAM
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Name: Abdirahman H

University: Imperial College London

University Course: Civil Engineering

Former Secondary School: Park View School

LIFE AT LAE TOTTENHAM

LAE Tottenham provides a stimulating learning environment for academically aspirational young people. In order to best prepare students for top universities and employment beyond, life at LAE Tottenham encompasses a variety of elements, both related to academics and personal development. The key areas of life at LAE Tottenham are:

1. An academically rigorous curriculum, with the vast majority of students studying four hard or facilitating A-Level courses in Year 12
2. Weekly clubs and societies and opportunities for sport and exercise as part of the formal curriculum
3. A focus on social responsibility through weekly community projects through the first two terms of Year 12

In addition to this, all students benefit from a full careers programme centred around nine key strands, a comprehensive programme of UCAS support, including Oxbridge preparation and an extensive PSHE programme, designed to help students' personal development.

Pastorally, students are supported through tutors via a house system, which provides them with a clear point of contact for pastoral issues. Students receive regular tutorials focused not only on preparation for higher education and employment but also in helping them to develop the personal skills for success. In addition to this, an Assistant SENCO, a Mental Health Lead and a School Counsellor are available to ensure that LAE Tottenham offers a supportive learning atmosphere for all students.

ART

COURSE CONTENT:

A-Level Art offers freedom to develop an individual visual language. As a result, outcomes vary enormously, embracing traditional and non-traditional materials, processes and context.

Students will explore practical and contextual work through a range of processes and media, installation, painting, drawing, printmaking, sculpture, film and photography.

This rich and diverse course enables students to develop:

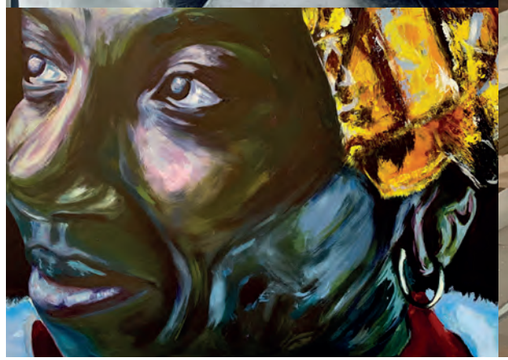
- intellectual, imaginative, creative and intuitive capabilities
- investigative, analytical, experimental, practical, technical and expressive skills, aesthetic understanding and critical judgement
- independence of mind in developing, refining and communicating their own ideas, their own intentions and their own personal outcomes
- an interest in, enthusiasm for and enjoyment of art, craft and design
- their experience of working with a broad range of media
- an understanding of the interrelationships between art, craft and design processes and an awareness of the contexts in which they operate
- knowledge and experience of real-world contexts and, where appropriate, links to the creative industries
- knowledge and understanding of art, craft, design and media and technologies in contemporary and past societies and cultures
- an awareness of different roles, functions, audiences and consumers of art, craft and design.

WHICH OTHER COURSE(S) DOES THIS COMBINE WELL WITH? Art combines well with any other A-Level subjects.

EXAM BOARD: PEARSON EDEXCEL Level 3 Advanced GCE in Art & Design (Fine Art 9FAO)

ENTRY CRITERIA: 7 in Art and 7 in English Literature and English Language

Those who have not studied Art at GCSE will be considered if they provide an independent portfolio of their own art work that reflects significant skills using a wide range of media: 2D and 3D, photography, film and evidence of trips to exhibitions as well as a sound knowledge of historical/contemporary art. Candidates would need to present their portfolio at interview and sit a formal drawing test.



BIOLOGY

COURSE CONTENT:

The reason GCSE sciences are compulsory is to produce a scientifically literate population. As such the Biology taught at school gives a brief grounding in what is, in very broad brushstrokes, more or less the whole field. By choosing to study Biology at A-Level, you begin the journey towards expert, and that means going back and filling in all the intricate and fascinating detail. Biology classes at LAE Tottenham are taught by two teachers, simultaneously leading students on different but complementary journeys through the specification.

In your first year with one teacher you will study the molecular - starting with water and working though increasing complexity until you master genetics, first at the personal and then at the population level, whilst the other teacher will take you from cells, via organs and organ systems to disease. In your second year you will continue that journey, from cell signalling to the nervous system and on into homeostasis, whilst your second teacher takes you through the bigger picture - the driving forces in ecosystems, the influence of humanity, culminating in genetic engineering.

Biology A-Level prepares students to continue their journey down any of the myriad possible pathways into expertise that are available to the accomplished biologist (be that in genetic engineering, environmental sustainability, medicine, or any other of an ever increasing choice of avenues).

WHICH OTHER COURSE(S) DOES THIS COMBINE WELL WITH? Chemistry and Mathematics

EXAM BOARD: AQA

ENTRY CRITERIA: Two 7s in Combined Sciences or 7 in Biology

CHEMISTRY

COURSE CONTENT:

Chemistry is fascinating and far ranging. We know something about the chemistry of stars and we know much about the chemistry of life. There are just over one hundred different elements, but their possible and actual combinations are so many as to seem infinite. Chemistry occupies a central position among the sciences. It has important interfaces with mathematics and physics, with engineering, and with biology and medicine. The study of Chemistry, with its uniquely wide span within the scientific spectrum, is an excellent way to develop your intellect. You acquire not only a powerful battery of analytical skills for problem solving, but also the ability to analyse critically and to ask the pertinent questions.

If you are looking ahead to higher education, then A-Level Chemistry is essential if you are considering studying medicine, dentistry or veterinary science. It is also recommended if you are thinking of studying engineering or environmental sciences.

In Year 12 you will be introduced to concepts of atoms and molecules, atomic structure, chemical bonding and the Periodic Table with emphasis on the elements and compounds of Groups 2 and 7 by one teacher. You will then continue by looking at chemical energetics, reaction rates and chemical equilibria. With your other teacher you will study organic chemistry via hydrocarbons, alcohols and their derivatives involving the study of modern instrumental techniques such as chromatography and spectroscopy. In the first term of Year 13 you will concentrate on extending your organic chemistry through the study of aromatic compounds, carbonyl compounds, carboxylic acids and their derivatives, and nitrogen compounds to polymers with one teacher. The aim of this is to provide you with a deeper knowledge of organic chemistry and an understanding of how it shapes the natural world, whilst providing many important products. In parallel you will study physical and inorganic chemistry which enables you to develop a quantitative and more in depth approach. You will explore the more advanced aspects of reaction rates and chemical equilibria combined with a study of acids, bases and buffers. The remaining section introduces you to topics such as entropy, lattice energies, electrode potentials and the transition elements. Laboratory work is a central part of the subject and you will undertake a variety of experiments and be assessed at various stages during the course.

The course assessment requires you to take three written papers completed at the end of Year 13. Papers 1 (Periodic Table, Elements and Physical Chemistry) and 2 (Synthesis and Analytical Techniques) include a number of multiple choice questions, followed by structured and extended response questions. Both papers cover theory and practical skills. Paper 3 (Unified Chemistry) covers the entirety of the course and only contains structured and extended response questions. Practical work is teacher-assessed and is reported separately

WHICH OTHER COURSE(S) DOES THIS COMBINE WELL WITH? Biology, Physics and Mathematics

EXAM BOARD: OCR A H432

ENTRY CRITERIA: Two 7s in Combined Sciences or 7 in Chemistry and 7 in Mathematics

COMPUTER SCIENCE

COURSE CONTENT:

Why study Computer Science?
A level Computer Science is a practical and rigorous course where you apply academic principles, learnt in the classroom, to real-world systems. It is a creative subject that combines invention and excitement. Our qualification values computational thinking, helping you develop the skills to solve problems, design systems, and understand the powers and limits of human and machine intelligence. These concepts lie at the heart of this qualification and are the best preparation if you want to study computer science at a higher level. Yet A level Computer Science also provides a good grounding for other subjects that require computational thinking and analytical skills.

A-Level Computer Science consists of two exam papers, each 2 hours 30 minutes long and each worth 40%. Paper 1 is an on-screen exam that tests your ability to program, as well as your theoretical knowledge of computer science. Paper 2 is a written exam that tests your theoretical knowledge of computer science.

The remaining 20% comes from your coursework. The coursework assesses your ability to take on a significant problem and produce a solution to it. Despite the large programming element, you will actually be marked on the documentation you produce.

This will typically consist of an analysis, designing the solution, annotated code showing your finished solution, tests demonstrating that your solution works and an evaluation.

WHICH OTHER COURSE(S) DOES THIS COMBINE WELL WITH? Mathematics and Languages

EXAM BOARD: OCR

ENTRY CRITERIA: 7 in Mathematics or 7 in Computer Science

To succeed you would need to already have a firm grasp of programming.

ECONOMICS

COURSE CONTENT:

The A-Level Economics course requires students to develop an understanding of economic concepts and theories through a critical consideration of current economic issues, problems and instructions that affect everyday life; to analyse, explain and evaluate the strengths and weaknesses of the market economy and the role of government within it; and to develop a critical approach to economic models and methods of enquiry.

Theme 1: Introduction to markets and market failure
This theme focuses on microeconomic concepts. Students will develop an understanding of:

- nature economics
- how markets work
- market failure
- government intervention.

Theme 2: The UK economy – performance and policies
This theme focuses on macroeconomic concepts. Students will develop an understanding of:

- measures of economic performance
- aggregate demand
- aggregate supply
- national income
- economic growth macroeconomic objectives and policy.

Theme 3: Business behaviour and the labour market
This theme develops the microeconomic concepts introduced in Theme 1 and focuses on business economics. Students will develop an understanding of:

- business growth
- business objectives
- revenues, costs and profits
- market structures
- labour market
- government intervention.

Theme 4: A global perspective
This theme develops the macroeconomic concepts introduced in Theme 2 and applies these concepts in a global context. Students will develop an understanding of:

- international economics
- poverty and inequality
- emerging and developing economies
- the financial sector
- role of the state in the macroeconomy.

The A-Level exam consists of three externally examined papers taken at the end of the two-year course.

The A-Level Economics qualification should enable students to progress to a straight economics degree with a focus on theory, or a degree in applied economics such as industrial, environmental, labour, public sector or monetary economics. Students should note that the vast majority of these courses also require A-Level Mathematics and some Economics degree courses prefer students with Further Mathematics.

Graduates are likely to find employment in Accountancy, Finance, Investment Banking, Insurance, Management Consultancy or as Professional Economists. Graduates with Economics degrees also rank amongst the top graduate salaries.

WHICH OTHER COURSE(S) DOES THIS COMBINE WELL WITH? Mathematics, Further Mathematics, Politics, Geography or History

Note that Mathematics A-Level is a requirement to study Economics at university.

EXAM BOARD: Edexcel - Economics A

ENTRY CRITERIA: 7 in Mathematics and English Literature or English Language

ENGLISH LITERATURE

COURSE CONTENT:

In English Literature students study an exciting range of texts including Gothic literature, a play by Shakespeare, parts of Milton's Paradise Lost and a seventeenth-century drama, The Duchess of Malfi. There is significant student choice involved in the coursework component – including the opportunity to do some creative writing. We currently study twentieth century American Literature - a poetry collection, a novel and a drama. Students develop their reading skills and become highly capable writers and thinkers who can set up a provocative thesis, argue, compare and evaluate.

Year 12 begins with the 'Gothic' component, taught by both class teachers in conjunction. Students study three Gothic novels and learn about how and why Gothic writing developed in the late eighteenth century, and how it developed right up to the present day. After the January Assessment and until the end of the year, students study Shakespeare with one teacher (currently Hamlet or Measure for Measure) and coursework texts with the other. The OCR syllabus encourages us to teach Shakespeare not only as a text but a living drama that is constantly re-interpreted in performance, and we regularly visit the theatre for students to learn from this in practise.

Over the summer, students plan their longer coursework task comparing a modern novel and a drama. When they return in year 13 they will study two 'pre-1900' texts in comparison, currently Books 9 and 10 from John Milton's epic poem Paradise Lost along with John Webster's tragedy The Duchess of Malfi. After the Mock Examinations, students have time to deepen and broaden their knowledge of text, context and interpretations, and refine their written responses in preparation for public examinations.

The English Department run extension sessions, where students read and discuss a range of literature beyond the syllabus as well as doing some drama. All students are encouraged to enter essay prizes and competitions including the English and Media Centre Magazine Close Reading Competition.

English literature is a traditional academic discipline very highly regarded by employers and universities. It provides an emotional outlet for students studying humanities or sciences, a different way of thinking for Mathematicians, and teaches the reading, writing, interpretative and argumentative skills that are important in any degree, and any career.

WHICH OTHER COURSE(S) DOES THIS COMBINE WELL WITH? History, Politics, Languages, Art, Psychology. An alternative way of thinking (and a way to develop writing skills) for Scientists and Mathematicians

EXAM BOARD: OCR

ENTRY CRITERIA: 7 in English Literature or English Language

FRENCH

COURSE CONTENT:

Students study a range of topics covering aspects of social and political change as well as artistic culture in the Francophone world. The four key themes are:

Aspects of French-speaking society: current trends
The changing nature of family; the 'cyber-society'; the place of voluntary work

Aspects of French-speaking society: current issues
Positive features of a diverse society; life for the marginalised; how criminals are treated

Artistic culture in the French-speaking world
Culture and heritage; contemporary francophone music; cinema

Aspects of political life in the French-speaking world
Teenagers, the right to vote and political commitment; demonstrations & strikes; politics and immigration

Students learn to discuss and debate pertinent questions linked to these topics, to listen and summarise the views of others, to read and show understanding of related texts and to translate short paragraphs both from and into French. The study of grammar is also a key part of the course, and we will build on GCSE knowledge in this regard.

Modern linguists also learn to critically analyse French literature and film, and this aspect of the course is often particularly appealing to our students. In Year 12, students study 'La Haine', a film about life in the gritty Parisian suburbs. In Year 13, students study Voltaire's masterpiece 'Candide'.

They also conduct detailed research into an aspect of the Francophone world that they find interesting, which forms the basis of the speaking assessment. French students at LAE Tottenham benefit from a weekly conversation class with a native speaker language assistant.

WHICH OTHER COURSE(S) DOES THIS COMBINE WELL WITH? Modern foreign languages can enhance any other course. Dual linguists have the option to study Spanish. The study of grammatical patterns and structures also tends to appeal to logical minds, so modern foreign languages can complement mathematics and the sciences as well as other arts subjects. Having an A-Level in modern foreign languages allows the possibility of studying abroad in the future, even if students do not pursue a foreign language at university.

EXAM BOARD: AQA

ENTRY CRITERIA: 7 in French

GEOGRAPHY

COURSE CONTENT:

Geography is the subject which explicitly engages with the relationship of human societies to each other over space and time, and their relationship with their environment at a variety of scales. Interpreting the world from a geographical stance involves challenging assumptions and critiquing evidence from a diverse range of stakeholders and sources.

Desirable attributes for A-Level Geography:

- An inquiring mind
- An interest in the world, people, places and environments
- An interest in practical fieldwork beyond the classroom
- An ability to design an independent personal investigation and write fluently
- An understanding of complex inter-relationships in a synoptic context
- An appreciation of current affairs at the local, national and global scale

The course includes a varied mix of content and skills, including observation, measurement, analytical, geospatial mapping skills, data manipulation and statistical tests, and fieldwork skills. The transferable skills acquired, including technical and interpersonal, are highly desirable and sought after by future employers.

Physical systems, human interaction, geographical debates (written papers: 80%)
There will be three papers in total: physical systems (1hr 30min), human interaction (1hr 30min) and geographical debates (2hr 30min). The compulsory topics are Earth's life support systems and changing spaces making places. Optional topics chosen by LAE Tottenham include coastal landscapes, trade in the contemporary world, power and borders, and hazardous Earth. The fifth optional topic is either diseases dilemmas or exploring oceans.

Investigative geography (non-examined assessment: 20%)
We are excited to offer students the chance to carry out an individual investigation based on a question or issue defined and developed by them. The investigation will include data collected in the field, and can relate to any part of the course content. This unit is assessed by a written project/geographical investigation, marked by teachers and moderated by the exam board.

WHICH OTHER COURSE(S) DOES THIS COMBINE WELL WITH? According to guidance from Russell Group Universities Informed Choices website, Geography can be a suitable choice for applicants for a wide range of degrees. In 2015, The Guardian identified Geography as the 'must-have A-Level'. Given its interdisciplinary nature, bridging the gap between natural and social sciences, Geography combines well with all A-Level subjects on offer at LAE Tottenham.

EXAM BOARD: OCR

ENTRY CRITERIA: 7 in Geography

HISTORY

COURSE CONTENT:

Students will concentrate chiefly on two papers, each constituting 40% of the final A-Level grade. Outlined in more detail below, these consist of a breadth study covering a century of modern British history and a depth study of the American Revolution and emergence of the American Republic. In addition, for the final 20% of the A-Level grade, towards the end of Year 12 students start to work on an independently researched coursework essay of c3,500 words that is formally assessed in Year 13. For this, students choose from a list of questions covering either political, socio-economic or cultural change in Russia across the period 1885-1964.

Breadth Study: 1G: Challenge and Transformation, Britain 1851-1964:

- Reform and challenge, c1851-1886
- Challenges to the status quo, c1886-1914
- The Great War and its impact, 1914-1939
- Transformation and change, 1939-1964

- How did democracy and political organisations develop in Britain?
- How important were ideas and ideologies?
- How and with what effects did the economy develop?
- How and with what effects did society and social policy develop?
- How and why did Britain's relationship with Ireland change?
- How important was the role of key individuals and groups and how were they affected by developments?

Depth Study: 2G: The Birth of the USA, 1760-1801:

- Britain and the American colonies, 1760-1763
- Enforcing the colonial relationship, 1763-1774
- Ending the colonial relationship, 1774-1776
- The War of Independence, 1776-1783
- Founding the Republic, 1776-1789
- Washington and Adams, 1789-1801

- What underpinned concepts of imperialism, mercantilism and legitimate government?
- What was the interplay of forces from below and above?
- How important was ideology and the economy in driving political developments?
- What issues were faced by those who attempted to challenge an established authority?

Opportunities also arise for students to explore alternative periods from those formally covered in the A-Level syllabus through supported entry into national essay competitions, collaborative events with LAE Tottenham's independent partner schools and an academic extension programme that invites participating students to attend public lectures in London and Cambridge.

WHICH OTHER COURSE(S) DOES THIS COMBINE WELL WITH? Politics, English Literature and Languages in particular. An alternative way of thinking (and a way to develop writing skills) for Scientists and Mathematicians.

EXAM BOARD: AQA

ENTRY CRITERIA: 7 in History preferred, however as no prior knowledge of the A-Level content is required, 7 in English Language or English Literature would also suffice.

MATHEMATICS

COURSE CONTENT:

The Applied Mathematics will be split into equal proportion between Mechanics and Statistics, and the overall balance between Pure Mathematics and Applied Mathematics will be 2:1. Pure Mathematics is a treasure trove of techniques for tackling problems. There is considerable extension of the ideas introduced at GCSE level – you learn how to solve cubic equations in addition to quadratics, you study vectors in three dimensions rather than just two, you explore the properties of "sin" and "cos" beyond the familiar geometrical context.

In Applied Mathematics you will learn how to simplify the complexity of the real world without losing the ability to make accurate, justifiable predictions about its behaviour. Mechanics is the study of the laws that describe motion and stasis. By applying Newtonian principles, you will learn to answer questions: at what angle should you kick a football to attain the greatest range? Why does your stomach lurch when a lift comes to a stop?

Statistics is the drawing of inferences in the presence of uncertainty. If you flip a coin ten times and it lands tails every time would you say the coin is biased? How certain can you be when making such a statement? You will learn to use probability to answer such questions and will also develop the statistics you have learnt at GCSE, discovering new ways of analysing data to compare populations. The Statistics exam will include questions which test the understanding of a pre-released data set. These questions will assume that candidates have investigated the raw data using computer technology including spreadsheets.

At the end of Year 13, all students will take three two hour long exams. The first two of these will cover the content explored in the Pure Mathematics side of the course, while the last exam will be split evenly between Mechanics and Statistics.

WHICH OTHER COURSE(S) DOES THIS COMBINE WELL WITH? Mathematics underpins much of our understanding of the universe. You will be unsurprised to hear that Mathematics and Further Mathematics will support your studying of other scientific subjects at A-Level such as Biology, Chemistry, Physics or Psychology. You may, however, be surprised to hear that mathematics will also support your studies in argument based subjects such as History or Politics. A key component of studying mathematics is the development of an ability to construct a complete logical argument.

EXAM BOARD: Edexcel

ENTRY CRITERIA: 7 in Mathematics

FURTHER MATHEMATICS

COURSE CONTENT:

What will you learn?
There are three strands to the course. In Pure Mathematics you answer many intriguing questions. How can you solve the equation? Why can't you solve in whole numbers? How does the calculator "know" the values for sine and cosine? Which is larger? In Mechanics you study motion and change: why do you fall backwards when the tube carriage lurches forward? How do you kick a football over the goalkeeper and into the net? Why can you predict solar eclipses next century but not the weather next Tuesday? Classical Mechanics will be of particular interest to those interested in Physics and Engineering. In Statistics you learn how to make justifiable inferences despite the ineradicable presence of uncertainty. Statisticians are much sought after in both business and journalism, and most technical writing relies on the clear exposition of facts and figures.

Why might you want to do it?
Many students want the highly developed Mathematical skills which are helpful not only for some topics studied in some Economics degrees (in particular, Oxford, Cambridge, Warwick and LSE) but also for a future career in trading derivatives, options and other financial products: the City is the second biggest employer of PhD Mathematicians. Some want an alternative to the essay writing of their other two subjects.

If you like Mathematics, if it interests you, and you are likely to get a grade 9 then you will enjoy Further Mathematics. You do not need to be the best in your class to succeed; interest and commitment are far more important than stellar performance in every test. Mathematics and Further Mathematics count as two separate subjects.

You receive two grades and they are recognised as distinct grades by universities: admissions tutors will not think that you are only studying one subject.

How does it work?
The examinations for the course will all take place at the end of Year 13 and will take the form of four one and a half hour long exams. The first two of these will cover the material explored in the Pure Mathematics sections, while the final two will cover the Mechanics and Statistics content respectively. Further Mathematicians at LAE Tottenham study the entirety of A-Level Mathematics during Year 12 and the entirety of A-Level Further mathematics during Year 13. All exams are sat at the end of Year 13.

WHICH OTHER COURSE(S) DOES THIS COMBINE WELL WITH? Mathematics underpins much of our understanding of the universe. You will be unsurprised to hear that Mathematics and Further Mathematics will support your studying of other scientific subjects at A-Level such as Biology, Chemistry, Physics or Psychology. You may, however, be surprised to hear that mathematics will also support your studies in argument based subjects such as History or Politics. A key component of studying mathematics is the development of an ability to construct a complete logical argument.

EXAM BOARD: Edexcel

ENTRY CRITERIA: 8 in Mathematics

PHYSICS

COURSE CONTENT:

The goal of Physics is to understand how things work from first principles. We aim to reveal the Mathematical beauty of the universe at scales ranging from everyday phenomena down to the subatomic and up to the cosmological level. Physics is an essentially practical subject so we will look at how to conduct experiments and draw conclusions from our results. We link this to the theory behind Physics and how to explain and predict the behaviour of our world and universe in mathematics.

Students who study Physics are prepared to work on forefront ideas in science and technology, in academia, the government, or the private sector. Careers might focus on basic research in astrophysics, cosmology, particle physics, atomic physics, photonics or condensed matter physics, or in more applied research in areas such as renewable energy, quantum information science, materials development, biophysics, or medical physics. Careers could also include teaching, medicine, law (especially intellectual property or patent law), science writing, history of science, philosophy of science, science policy, energy policy, government, or management in technical fields.

The A-Level Physics course covers a wide range of physical phenomena. You can expect to spend a lot of time carrying out experiments and investigations physical phenomena. We will help you develop your understanding of these and be able to apply scientific, and testable, theories and mathematical problem solving skills.

Some of our students have been working with UCL carrying out genuine academic research developing skills that would often be part of a master degree, we have also sent students to a CERN summer school.

Studying Physics strengthens quantitative reasoning and problem solving skills that are valuable in almost any career. Physics teaches students how to analyze complex problems and they give students a strong quantitative background that can be applied in any technical field. Being a good physicist requires the application of numbers to the real world, so many people looking for a career using mathematical skills e.g. finance will study Physics.

WHICH OTHER COURSE(S) DOES THIS COMBINE WELL WITH? It is often said that Mathematics is the language of Physics, so Mathematics combines very well with Physics. Further mathematics combines twice as well; the overlap is almost half an A-Level. Some of the Physics content is also directly referred to in Chemistry.

Physics A-Level is a requirement for degree courses in Physics, Engineering and, usually Materials Science.

EXAM BOARD: OCR (Physics A H556)

ENTRY CRITERIA: 7 in Physics or two 7s in Combined Sciences and also 7 in Mathematics

POLITICS

COURSE CONTENT:

Students will explore the machinations, intrigue and debate within Westminster and Washington. You will gain knowledge and form opinions on questions such as 'how democratic is the UK?', 'is Trump an imperial President?', 'is Boris Johnson's Conservative Party Thatcherite?', 'how are civil rights defended in the USA?', and, fundamentally, 'what is going on?'. The course also examines the theoretical underpinnings, with time spent analysing liberalism, socialism, conservatism, and feminism. Students will develop critical writing, oral and analytical skills. Debate and discussion are an essential element of classes, with differing viewpoints encouraged, and an expectation that students will learn to listen to others, as well as to develop the ability to defend their views logically and academically.

Politics is predominantly an essay-based subject, so students should expect to write at length. They will also need to keep up-to-date with the news and current affairs through reading quality newspapers and journals, listening to podcasts and relevant radio, and watching news programmes.

WHICH OTHER COURSE(S) DOES THIS COMBINE WELL WITH? History, Economics, and Geography have the most obvious cross over in terms of skills and content, but the skills taught are also useful for subjects such as English, and provides a contrast for scientists, mathematicians and artists.

At University, Politics has links again with History and Economics, but also with languages, Philosophy, Sociology and Law.

EXAM BOARD: Edexcel

ENTRY CRITERIA: 7 in History or English Literature or English Language

PSYCHOLOGY

COURSE CONTENT:

A-Level Psychology covers a wide range of theory and research into the scientific study of human behaviour. Students will be expected to learn a range of theories that can explain everyday behaviour, so that the study of Psychology will lead to greater insight into human behaviour.

- demonstrate knowledge and understanding of psychological concepts, theories, research studies, research methods and ethical issues
- apply psychological knowledge and understanding to new situations
- analyse, interpret and evaluate psychological concepts, theories, research studies and research methods
- evaluate therapies and treatments including in terms of their appropriateness and effectiveness.

Knowledge and understanding of research methods, practical research skills and mathematical skills will be taught. These skills will be developed through study of the specification content and through ethical practical research activities, involving:

- designing research
- conducting research
- analysing and interpreting data.
- The course is split into three units:

Unit 1: Introductory topics in Psychology

- Social influence
- Memory
- Attachment
- Psychopathology

Unit 2: Psychology in Context

- Approaches in Psychology
- Biopsychology
- Research methods

Unit 3: Issues and options in Psychology

- Issues & Debates
- Relationships
- Schizophrenia
- Addiction

WHICH OTHER COURSE(S) DOES THIS COMBINE WELL WITH? Biology is the most useful combination as there is a significant biological component to the course. English and Mathematics are also good combinations as they support the content that is covered.

EXAM BOARD: AQA

ENTRY CRITERIA: Two 7s in Combined Sciences or 7 in Biology or Chemistry and 7 in English

SPANISH

COURSE CONTENT:

Students study a range of topics covering aspects of social and political change as well as artistic culture in the Hispanic world. The four key themes are:

Aspects of Hispanic society
Modern and traditional values; cyberspace; equal rights

Multiculturalism in Hispanic society
Immigration; racism; integration

Artistic culture in the Hispanic world
Modern day idols; Spanish regional identity; cultural heritage

Aspects of political life in the Hispanic world
Today's youth, tomorrow's citizens; monarchies and dictatorships; popular movements

Students learn to discuss and debate pertinent questions linked to these topics, to listen and summarise the views of others, to read and show understanding of related texts and to translate short paragraphs both from and into Spanish. The study of grammar is also a key part of the course, and we will build on GCSE knowledge in this regard.

Modern linguists also learn to critically analyse Spanish literature and film, and this aspect of the course is often particularly appealing to our students. In Year 12, students study 'El laberinto del fauno', a fantasy drama set during the Spanish civil war. In Year 13, students study the play 'Las bicicletas son para el verano'.

They also conduct detailed research into an aspect of the Hispanic world that they find interesting, which forms the basis of the speaking assessment.

WHICH OTHER COURSE(S) DOES THIS COMBINE WELL WITH? Modern foreign languages can enhance any other course. Dual linguists have the option to study French. The study of grammatical patterns and structures also tends to appeal to logical minds, so modern foreign languages can complement mathematics and the sciences as well as other arts subjects. Having an A-Level in modern foreign languages allows the possibility of studying abroad in the future, even if students do not pursue a foreign language at university.

EXAM BOARD: AQA

ENTRY CRITERIA: 7 in Spanish

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