

Elizabeth Moir School



A Level Choices

2021 - 2023

AN INTRODUCTION TO A LEVEL

6th Form students at Elizabeth Moir School study the International Advanced Level course set by Edexcel International in all subjects except Computer Science. Edexcel is the examining body that includes the former London Examinations board. The A Level qualification is recognised by universities around the world and will allow students to gain entry not only to British universities but to universities in the USA, Australia and elsewhere.

The A Level course is divided into either four or six units, depending on the subject, with all units examined at the end of the two-year course. It is also possible for students to take only half the course and earn a separate AS qualification. Students are entered for the examinations through the British Council: in 2020 the costs were Rs. 10,300 per unit in most subjects with six units and Rs. 13,800 per unit, or more, for subjects with four units or papers.

Entrance Requirements

Students should have gained good grades in IGCSE, or equivalent, examinations – including ‘8’ or ‘9’ grades in their A Level subjects – if they are to cope with the demands of the challenging courses. The minimum requirements for a student to start the course are:

EITHER to have gained AT LEAST grade ‘6’ or above in five subjects including English Language and Mathematics and AT LEAST an ‘8’ in their prospective A Level subjects in IGCSE, or equivalent, examinations

OR to have passed the relevant 6th Form Entrance Tests

Exceptions will only be made by the Head of School for a specific reason.

Number of Subjects

All students must choose at least three subjects and universities will only expect students to have taken three subjects. Some students may choose to study four subjects, however, and this may be an advantage when applying to top universities where competition for places is fierce. Students should be aware, however, that taking four subjects is a substantial challenge involving a large amount of work and requiring considerable determination, organisation and motivation.

Range of Subjects

We offer the core academic subjects recognised as being most academically rigorous by top universities. Other more vocational subjects are not given the same recognition by these universities. Most British universities now have lists of 'non-preferred' subjects and this includes Commerce, Accounts, Psychology and Law. Students who take one of these subjects are at a disadvantage and students who take two are not even considered, so we do not offer them.

Choice of Subject

Factors that will affect students’ choice of subject will include their interest in and enthusiasm for the subject, their ability in the subject, and their future career aspirations. Some university courses have specific A Level requirements: Mathematics and Physics are required to study Engineering, and Mathematics for both Computer Science and Economics (though not for joint degrees including Economics such as PPE). Chemistry, Biology and either Maths or Physics are generally required by universities for Medicine, but the Sri Lanka Medical Council now requires doctors who have qualified overseas to have studied Physics, Chemistry and Biology at A Level if they are to practise in Sri Lanka.

Most university courses, however, do not have specific requirements and all subjects offered at Elizabeth Moir School are accepted as having equal academic value. Students should not think that choosing certain subjects will improve their chances of admission to a good university. Both universities and future employers will look for well-rounded students with varied interests, while all subjects teach skills such as literacy, numeracy, problem-solving, research and communication that are in demand with employers.

Students are strongly encouraged to consult their teachers for advice on their choice of subjects.

MATHEMATICS and FURTHER MATHEMATICS

Introduction

Mathematics provides a language for Science, Finance, Engineering and for many other fields. The study of Mathematics develops skills of analysis, logical argument and problem solving. Mathematicians are trained to think logically about problems. This training will be useful in whatever future career is adopted. It offers committed students enjoyment and encourages critical thinking.

The Further Mathematics course is very challenging and deals with a number of abstract concepts and is useful for those who might want to study Engineering, Economics or Mathematics at university level.

What is A Level Mathematics and Further Mathematics about?

The Mathematics course is a combination of Pure Mathematics, Particle Mechanics and Statistics.

The Further Mathematics course consists of an additional six units of Pure Mathematics and Particle Mechanics and is only for students who take Mathematics as one of their subjects.

Students who have studied IGCSE Further Pure Mathematics but do not choose to take A Level Further Mathematics may still be able to cover the AS Further Mathematics syllabus in addition to the normal Mathematics units.

Mathematics is a good supplementary option for those who have selected Physics or Economics.

What skills do you need?

Students will have successfully completed the IGCSE Mathematics course or an equivalent examination. A genuine enjoyment of analysing problems will help students to complete the course successfully.

Commitment and aptitude for Mathematics are essential to study Further Mathematics and students should have gained a 9 in IGCSE Mathematics, or an equivalent examination.

What is Mathematics useful for?

Mathematics provides training for a diverse number of fields including Technology, Economics, Research, Education and any area in which a logical and numerate approach is prized. There is a growing demand for mathematically-oriented degrees in areas such as Actuarial Science, Finance, Accounting, and Engineering which provide an almost unlimited choice of careers.

A Level Mathematics is a requirement to study Engineering, Computer Science, Economics and many other university courses.

PHYSICS

Introduction

Physics – you may love it or hate it, but you cannot live without it. Even before a baby is born, Physics is at work in ultrasound scanning, producing pictures of an unborn child in a mother's womb. Can you imagine that glass fibres no thicker than a hair use the property of light called 'total internal reflection' to carry information from one computer to another computer miles and miles away. Physics is everywhere and studying Physics brings an understanding of how things work.

What is A Level Physics about?

It is an introductory course to the challenges of Physics, providing a foundation of key principles. Applications of the content taught at AS include sports, spare-part surgery, medical Physics, music, solar cells, and even the production of sweets and biscuits. In the A2 section, students learn about transport, communications, construction of buildings in earthquake zones as well as the latest research in particle Physics, astrophysics and cosmology. There are also two papers based on practical skills.

What skills do you need?

The course builds on the knowledge, understanding and process skills attained in IGCSE Physics so successful completion of the IGCSE Physics course is an essential requirement. Students should also have successfully completed the IGCSE Mathematics course or an equivalent examination as numerical and mathematical skills are important in A Level Physics. Students also need to be able to communicate effectively, carry out research and think critically about problems.

What is Physics useful for?

Physics is an essential requirement for all university Engineering courses and leads on to a wide range of courses and careers, including:

- Civil, Mechanical and Electrical Engineering
- Mathematics
- Natural and Physical Sciences
- Medicine
- Chemical Engineering
- Computer Science

In fact Physics is recognised as an entry qualification for a wide range of Higher Education courses and many fields of employment.

Suggested Reading

- Salters Horners Advanced Physics for Edexcel AS / A2 Physics

CHEMISTRY

Introduction

Chemistry is a subject that is changing and expanding and is now very diverse in its methods, and ranges over very wide fields. In the scientific revolution, chemistry has played an increasingly prominent part. It seems that in the future it will contribute to the development of new and important materials for construction, medicine, clothes and foodstuffs and provide for the basic needs of health, shelter, food and clothing. In addition to these material benefits, it gives power to free us from ignorance.

What is A Level Chemistry about?

A Level Chemistry provides the essential components and practical skills to explore the application of Chemistry in both a local and global perspective, thus providing students with a better understanding of Chemistry and the impact it has upon their lives. The A Level syllabus includes new topics such as climate change, green chemistry, pharmaceuticals and nanotechnology.

What skills do you need?

Successful completion of the IGCSE Chemistry course is an essential requirement. You need to be competent in basic mathematics and great emphasis is placed on problem solving and on laboratory skills which involve data analysis, use of formulae and interpretation of findings.

What is Chemistry useful for?

Successful completion of A Level Chemistry offers students several routes for progression as Chemistry is recognised as an entry qualification for a wide range of higher education courses and careers. It is also an essential requirement for Medicine, Veterinary Science, Dentistry and Chemical Engineering. It overlaps with other subjects such as Biology, Physics, Mathematics and other fields such as medical science, without any sharp dividing line.

Suggested Reading

Visit the following websites to find out more about careers involving Chemistry:

www.rsc.org.

www.abpi-careers.org.uk

BIOLOGY

What is A Level Biology about?

A Level Biology is about understanding the diversity of living organisms, their evolutionary trends and ecological relationships. The innovative new A Level syllabus includes the most recent developments in the field from genetic engineering to the causes of heart disease to how DNA is used by forensic scientists in crime scene investigations. It covers many topical and controversial issues such as genetic screening, stem cell research, biodiversity and evolution. Students also conduct a stimulating and thought-provoking study of the human brain, the least understood organ in the human body, learning about its role, the effect of drugs and stimulants on cerebral function, and the potential consequences of even minor damage.

What skills do you need?

Students should have enjoyed and successfully completed the IGCSE courses, or equivalent, in Biology, Human Biology and Chemistry.

Interpretation of data is important – students should be able to use and process raw data in order to arrive at meaningful inferences as well as be able to present information in the form of tables, charts and graphs. A high standard of practical skills is also useful.

What is Biology useful for?

Students who study the Biology of living organisms will learn to develop a sense of caring for the environment, when they learn how our very existence depends on the fine balance maintained between the organisms and the environment. It also helps to look after their own health and that of their families.

Biology is also be a pre-requisite for specific courses in the universities e.g. Medicine, Veterinary Science, Biological and Environmental Sciences.

Study of Biology will open you to a host of professional courses in a wide range of fields, such as Agriculture, Horticulture, Nutrition, Forensic Science, Food Technology and the Pharmaceutical industry. Biotechnology is a major growth industry in the modern world and careers are opening up in many new areas

Suggested Reading

Advanced Biology – Michael Roberts

<http://www.nuffieldfoundation.org/practical-biology>

<http://www.saps.plantsci.cam.ac.uk/>

COMPUTER SCIENCE

Have you ever wondered how a computer system works, what language computers speak, or how a computer makes a decision? Are you interested in solving problems and manipulating data? If so, Computer Science could be the subject for you.

What is A Level Computer Science about?

Algorithms run our daily lives, whether it is finding our way with satellite navigation, communicating with our friends across the globe, or even putting on our TV or washing machine. A Level Computer Science is as much about problem-solving and automating solutions as it is about computers, although computers are used as tools and the course provides an understanding of how computers work. Topics include computer architecture, communications and networking, data structures, data security, data modelling and manipulation, programming, software development, and ethics and ownership.

What skills do you need?

Students should have achieved an 8 or 9 in IGCSE Computer Science, or an equivalent qualification. A strong background in Mathematics is essential to enable students to cope with topics such as the binary number system, logic gates and logic circuits, and algorithm design. A keen interest in technology, willingness to practise programming skills independently, and an aptitude for problem-solving are essential.

What is Computer Science useful for?

Programming is a vital skill in the 21st century that is becoming increasingly important in a wide range of professions with the increasing use of technology and AI in different fields. Students who can code will be at an advantage in almost any job, as well as being in demand from tech companies, both internationally and in Sri Lanka.

Steve Jobs said: 'I think everyone should learn how to program a computer because it teaches you how to think'. The course's emphasis on abstract thinking, problem-solving and mathematical reasoning makes it a good foundation for further study in Computing, Engineering or any mathematical or scientific field.

Suggested Reading

Students should read magazines such as *Wired*, *Maximum PC* and *2600* to keep up to date with the latest advances in computing. Movies like *The Imitation Game* and *The Social Network* will also stimulate students' interest in Computer Science.

ECONOMICS

What is A Level Economics about?

Those who can relate Economics to the real world around them find that Economics is an interesting subject. That is easy for most people to do because examples of Economic forces are all around us and are constantly in the media. Economics includes a study of people and production; markets and institutions; enterprise and exploitation; individual behaviour and social relations; scarcity and choice; prosperity and poverty; power and free trade; national economies and globalisation; efficiency and waste; crisis and growth; inequality and welfare; rent and reward; the creation and destruction of resources; the environment and the prospects for the economic future of humankind.

It is a dynamic subject which studies changes in the economy, and a subject which changes as new ideas battle for influence with traditional interpretations. Economics is a wonderful way in which to understand how the world works. It helps students to relate and understand the vast changes taking place in the world today from the establishment of the single currency in Europe to the breakdown of the former Soviet Union.

What skills do you need?

No previous knowledge of Economics is required in order to study the A Level course. However, a background in Mathematics is essential to enable students to cope with data analysis and use of formulae. Excellent comprehension of the English language is also required as students will be required to answer essay questions as part of the course. Economists need to use a variety of skills and as such, the A Level course complements many other subjects including Mathematics, History, Literature and Geography.

What is Economics useful for?

Economics is an essential part of life. A Level Economics will equip students with the skills and knowledge to understand economic phenomena and current economic issues. For example, do you want to find out why certain economies are so under-developed while others have such rapid rates of economic growth? Do you want to learn why Odebrecht can increase prices and still continue to expand while other industries would go bankrupt if they increased their prices, or why stock markets crash and why investors like Bill Gates have made it big?

Economics will also help to encourage students to question the world around them. It is uncommon to find one answer to any economic problem and as a result all economists are constantly being tested and stimulated. The course is interesting and students are encouraged to debate and argue on all topics being studied. As such, Economics provides a good foundation for many careers including Actuarial Science, Accounting, Business, Banking and Law.

Suggested Reading

In order to determine whether or not to study A Level Economics, students should look at recent issues of *The Economist*.

HISTORY

Who would want to rule the world? Why aren't all people treated equally? Why is there so much war and suffering? Why are people persecuted for their beliefs? Study History and you will find out.

History is one of the most fascinating and intellectually stimulating subjects to study in the 6th Form. It is not about learning dates but about developing individual ideas about the past and arguing about different interpretations of events. It is the study of how the modern world has come into existence, examining the role of new ideologies, great men, class conflict and wars in causing change. If you are interested in current affairs and want to learn about why revolutions happen, if you want to change the world and need to find out how, or if you are just interested in bloodshed and bravery, then History could be the subject for you.

What is A Level History about?

Students are introduced to the major ideologies, individuals, societies and events that have shaped the world in which we live today and asked to consider how these forces will shape the future. The course concentrates on the rival modernist projects to create a new, improved world that dominated the nineteenth and twentieth century and continue to shape modern politics.

Students study four extremely exciting and very different periods of History: the American Revolution, the end of the British Raj in India, Revolutionary Russia, and the causes of World War 1 and 2. Students learn about important events like the Versailles Peace Treaty, the American Civil War, the Emancipation Proclamation, the Amritsar Massacre and Indian Independence; about famous people like George Washington and Abraham Lincoln, Gandhi and Nehru, Lenin and Trotsky, and Hitler, Mussolini, Stalin and Churchill; and about ideologies like Imperialism, Nationalism, Democracy, Fascism and Marxism.

What skills do you need?

The most important skill required is the ability to express ideas clearly in good written English and the course is very demanding in the amount of reading and writing required. Although IGCSE History is not a pre-requisite of the course, it will be a significant advantage.

What is History useful for?

First and foremost History provides a general education in the modern world and in humanity that all young people should aspire to. It also teaches key skills that will be useful in many fields of later life. Students will be taught to communicate with clarity both orally and in their written work, to organise individual research, to develop original and persuasive arguments and support them with well-selected evidence, and to discuss difficult concepts confidently and intelligently. Historians have gone on to enjoy success in Law, Business, Politics, Journalism, Broadcasting, Public Relations and Advertising among other fields. History can be taken in any combination of subjects but, in particular, complements Literature, Economics and Geography.

Suggested Reading

A People's Tragedy by Orlando Figes provides a magisterial panorama of Russian society during the Revolution. A good one-volume history of World War 2 is *All Hell Let Loose* by Max Hastings. *The Penguin History of the USA* by Hugh Brogan is a model of good sense, coherent analysis and clear prose. *Team of Rivals: The Political Genius of Abraham Lincoln* by Doris Goodwin is brilliantly readable. Students are also encouraged to read novels such as *Animal Farm* and *1984* by George Orwell and Vasily Grossman's *Life and Fate*, and to watch any of the excellent documentaries and films about the periods studied.

GEOGRAPHY

What are the forces influencing our natural environment – landscapes, plants and animals, the weather and climate? What are the issues affecting people and the places where they live? How and why are the cities and countryside changing? What are the economic forces that drive the world economy and how are they changing? How are people affecting the environment we all live in? What opportunities, challenges and constraints does our world offer us? What decisions are being made about the use and management of resources and who makes these decisions? What causes global problems such as poverty, the plight of refugees, natural hazards, and global warming and how can we solve them? These are the sort of questions that you will be answering if you choose to study Geography.

What is A Level Geography about?

The A Level course focuses on the interaction between humans and their environment and although central geographical theories are covered, the course is firmly based in reality, emphasizing the application of Geography and using case studies, examples and personal enquiries at every opportunity. The course focuses on the unity of geography – the essential links between human patterns and processes and the natural world, and the human impact on the natural environment.

What skills are required?

It is not necessary to have studied Geography at IGCSE in order to take the subject for A Level, as much of the material studied is new. However, several topics covered in the course develop work covered at IGCSE, and the skills and knowledge gained at IGCSE provide a solid foundation for the A Level course. It is also essential to have a thorough grasp of written English and basic Mathematics. What is most important is that you should have a lively and enquiring mind, an interest in the environment and current affairs, a willingness to explore new ideas and an ability to communicate your ideas effectively.

What is Geography useful for?

Geography students have access to a wide range of possible career and higher education opportunities. You learn and use a variety of transferable skills throughout the course. These include collecting, analysing and interpreting data from many various sources, communicating your findings in different ways, and identifying and developing the links between different parts of the subject. These skills are in great demand and are recognised by employers and universities as being of great value.

Geography combines well with almost any other A Level subject. Taken with sciences like Mathematics, Physics, Chemistry and Biology, Geography supports applications for almost any science-based university course like Engineering, Psychology, Environmental Sciences, Geology, and Biology. Taken with humanities like Literature, History and Economics, Geography supports an equally large range of university subjects such as Business, Law, Media, Politics and Philosophy. Geography does not force you into an early decision about your future, but instead broadens your options.

Suggested Reading

If you are curious about Geography, either as a subject at A Level, or simply because it is a fascinating and absorbing subject, recent editions of the following magazines are worth reading over the summer vacation: *National Geographic*, *Geography Review*, *The Economist*, and any other world news or current affairs magazines such as *Newsweek* or *Time*.

ENGLISH LITERATURE

English Literature is a subject that allows you to think for yourself and to apply knowledge with confidence and accuracy, as well as develop analytical skills to a high standard. Other subjects require you to learn facts and formulae, but not English Literature. Choosing English Literature at A Level is choosing independent thought, articulate argument and lively discussion.

What is A Level English Literature about?

<u>Drama</u>	<i>Hamlet</i> by William Shakespeare <i>Dr. Faustus</i> by Christopher Marlowe <i>A Streetcar Named Desire</i> by Tennessee Williams
<u>Prose</u>	<i>Frankenstein</i> by Mary Shelley <i>The Handmaid's Tale</i> by Margaret Atwood <i>The Kite Runner</i> by Khaled Hosseini
<u>Poetry</u>	Contemporary poetry 2002-2011 Metaphysical Poetry Unseen Poetry

What skills do you need?

The most important requirement for anyone wanting to study English Literature is a love of reading. Without this, you will neither enjoy nor do well on the course. You also need to value language and appreciate it in all its subtleties: not only will you be reading a lot, you will also be writing, and developing your own unique literary style. Students should have excellent comprehension of the English language and be able to communicate fluently and stylishly in their writing. Although it is not a requirement, previous study of Literature or History would assist you in developing the style of writing needed to excel in English Literature.

What is English Literature useful for?

All universities and colleges recognise the usefulness and relevance of the skills which you develop studying Literature, and these skills – the fluent expression of ideas, a clear yet personal style, the analysis of various types of information – will be of great help in whatever university course, and indeed job, you choose. People who study English Literature follow many different paths after school: some go on to university to read Law, Business or other social sciences; others move into the media, whether it is the world of newspapers, or television, or the ever-expanding Internet industry.

Whatever career you are aiming for, whichever university you want to get to, choosing English Literature for A Level is a step towards becoming an articulate, astute individual who can voice their opinions and make others listen.

Suggested Reading

Students should read the first year's Drama and Prose set texts as carefully as possible before starting the course, but will also benefit from reading as much and as widely as possible.

ART

What is A Level Art about?

A Level Art is based on students developing and exploring ideas through Art. Students are required to research from primary and secondary sources, experiment with different media and techniques, and record their observations and progress both visually and in writing. The course also provides exciting opportunities to combine traditional artistic skills with new digital techniques.

Students are assessed on the basis of two components.

Component 1: Personal Investigation 60%

- A3 sketchbook, supported by A4 sketchbook, leading to A1 final piece
- Based on a theme or project selected by the student
- Supported by a personal study of at least 1,000 words

Component 2: Externally-set Assignment 40%

- Based on a theme set by the examiners and released in January of the Upper 6th
- A2 final piece produced in 15 hours under examination conditions

What skills do you need?

Drawing skills are obviously vital, as is experience working with a wide range of media and techniques. Effective writing skills are required for the Personal Study, as well as annotations. Good time management is essential as students are assessed on a portfolio of their work throughout the two years of the course so consistent application is essential. Students who have done IGCSE Art have a significant advantage as they will have the required skills and will be familiar with the procedure.

What is Art useful for?

People spend more time looking at pictures today than ever before. The internet and social media mean that images, photos, animation, design and visual appearance have never been more important. Artistic skills are increasingly important in the modern world and valued by employers in very diverse fields. A Level Art provides a good foundation for a wide range of careers including Architecture, Design, Fashion, Advertising, Graphic Design, Web Design and many media related fields from Photography to Filmmaking.

Suggested Reading

The Story of Art by E.H. Gombrich is a classic and highly accessible introduction to Art and Art History that will help students learn about different artists and understand how and why different artistic styles and movements have developed.

SUBJECT CHOICES

Students must choose three or four subjects.

Name: _____ Date: _____

Subjects: 1. _____ 2. _____

3. _____ 4. _____