FALCON COLLEGE

AS & A LEVEL

PROSPECTUS

2026

THE ADVANCED SUBSIDIARY (AS) AND ADVANCED LEVEL CURRICULUM

At Falcon College we offer a staged assessment route to Advanced Level. At the end of their Lower Sixth Form students will write the AS exams and then the A2 exams at the end of their Upper Sixth Form year.

Students following this route will have passed 5 subjects at IGCSE and will have met the requirements of admission into three subjects at A level.

The following subjects will be offered to the qualifying students:

AS & A LEVEL SUBJECT CHOICES 2026			
Group 1	**Group 2**	**Group 3**	**Group 4**
Art & Design	**Accounting**	**Physics**	**Business**
Geography	**Biology**	**Physical Education (AS only)**	**Chemistry**
Mathematics	**Design & Technology**	**Travel & Tourism**	**Computer Science**
	History	**Geography (for maths students)**	**Literature in English**
			Environmental Man (AS only)

You are required to select **three** or **four** subjects. Only one subject can be selected from each group. All students offering **three** subjects will be required to do, over and above their selected subject, English Language at AS level if they have attained B or A symbols at IGCSE or English General Paper if they have attained C symbol and below. Some students may be required to do four subjects at A2 level, in which case they may be exempted from doing English Language. Students opting to do four subjects must seek the approval of the Deputy Head (Academics).

All subjects listed will be offered at Advanced Level (except for Physical Education & Environmental Management).

Students follow a staged approach to their Advanced Level. Students write the subsidiary (AS) examinations at the end of their Lower Sixth year and the Advanced Level (A2) at the end of their Upper Sixth year. The Cambridge Advanced Subsidiary (AS) Level often represents the first half of the Advanced Level course with the components (papers) taken at this level contributing to 50% of the final Advanced Level mark. However, if a student feels that he can improve on their AS results then they can rewrite the AS components in a full set of A levels. At Falcon College nearly all departments may require students who do not score a B or better at AS level to re-write all the AS components in the full set of A levels.

The only exception to the staged approach is Mathematics where the options offered may not allow for a carry-over of AS marks into Advanced Level. This may change from year to year, but you will be advised of the options chosen by the Maths Department in any particular year.

Students who have not passed 5 subjects at IGCSE or those who have failed to meet the minimum requirements for admission into 3 subjects at A level will be required to repeat Form 4. Normally, there will be no additional repeat class. In addition to English Language, Mathematics and Science at IGCSE level some vocational courses may be offered to these students.

The subjects you will do at AS and possibly at A2 level will depend on your IGCSE results in these subjects and should be influenced by the career you wish to pursue. The AS and A Level subject choices you make

can have a significant impact on the course options available to you at university or the career you will be able to pursue. Think carefully about this before making your choice.

It is also important for you to consult with your parents before making a final decision on the subject choices at AS/A2 level.

Advanced Level work will make extreme demands on your time and effort, so you should be choosing subjects that you can cope with. There is not much point in choosing a subject that you like but in which your competency is suspect. Please be realistic.

Statistics gathered over the years have proved that students who take AS Mathematics and/or Science subjects (physics, chemistry, biology & computer science) with C grade passes in these subjects at the IGCSE level struggle to make the grade at AS level in these subjects. A lamentable number fail to make the grade. Please give this fact due consideration when making your choices.

You may be allowed to do some subjects at the AS level even if you have scored C grades in those subjects at the IGCSE level, but they ought to have been done at the extended level. This will be at the discretion of the IGCSE subject teachers who will make the decision in consultation with the Director of Studies and after careful assessment of the student's potential ability to cope with the demands of the subject.

If you obtained C grades only at the core level or you have not passed enough subjects to meet our requirements then you are strongly advised to join the Form 5 group and attempt the subjects at the extended level.

The college reserves the right to withdraw a subject from the curriculum if the number of students opting for it does not make it viable.

CAREER CONSIDERATIONS

The career you choose should be influenced by the subjects you enjoy studying and in which you are reasonably competent.

You should try to narrow the field of choices to arts, sciences or commerce. Refrain from making rigid career choices before you become familiar with the areas of specialisation that will be available and the job-related market trends. Recent trends at universities encourage students not to make rigid career choices too early.

You should be aware of the following:

1. All **medical** fields require chemistry and two other sciences.
2. **Engineering** requires mathematics and physics/chemistry and one other subject.
3. **Agriculture** prefers biology and chemistry.
4. **B Comms** usually require post IGCSE mathematics.
5. **BA degrees** have very few restrictions.
6. **Actuarial** Sciences require mathematics, physics and one other science subject.

If you are not sure consult the careers master or find a suitable prospectus.

Be actively involved in your own future career – don't follow the crowd. You need to be realistic about the careers that you will be able to pursue. Don't pursue careers which require subjects that you are not comfortable with. The demands of Advanced Level work are extreme. So, it is important to make realistic choices before committing yourself.

FUTURE JOBS & JOB OBSOLESCENCE

I would like to share a thought with you on Education and the future. Let me start by quoting two popular sayings....

> *"We are currently preparing students for jobs that don't yet exist . . .*
> *Using technologies that haven't been invented . . .*
> *In order to solve problems we don't even know are problems yet".*
> **- Richard Riley former U.S. Secretary for Education**

and

> *"What We Know About the Future Is that We Don't Know About the Future".*
> **-Karl Fisch and Scott McLeod in their video, Shift Happens**

The very rapid, virtually exponential advances in technology have rendered the future very uncertain, if not totally unpredictable. Jobs that we take for granted, even those requiring today's technologies, will become obsolete in a few years' time.

Your expectations should be realistic and should take cognisance of the implications of the rapid development in technology. Jobs that you think are well-paying and popular today may actually be obsolete by the time your son or daughter leaves tertiary education and joins the job market. This is an important consideration and some research on the Internet on job trends might be useful.

This prospectus outlines the broad curriculum content of the subjects that we offer and the career opportunities that exist for them. Please study the subjects carefully before making your final choice.

ACCOUNTING (9706)

INTRODUCTION

The A level Accounting course is intended to equip students with skills that will enable them to apply accounting concepts, principles, and practices in the business world. It also seeks to develop skills of communication, analysis, interpretation, and presentation of both qualitative and quantitative accounting information.

SYLLABUS

Cambridge International Examinations

Content overview

Cambridge International AS Level students study topics 1.1–2.2.
Cambridge International A Level students study all topics 1.1–4.4.

	AS Level topics	A Level topics
Financial accounting	1.1 Types of business entity 1.2 The accounting system 1.3 Accounting for non-current assets 1.4 Reconciliation and verification 1.5 Preparation of financial statements 1.6 Analysis and communication of accounting information	3.1 Preparation of financial statements 3.2 Regulatory and ethical considerations 3.3 Business acquisition and merger 3.4 Computerised accounting systems 3.5 Analysis and communication of accounting information
Cost and management accounting	2.1 Costs and cost behaviour 2.2 Traditional costing methods	4.1 Activity based costing (ABC) 4.2 Standard costing 4.3 Budgeting and budgetary control 4.4 Investment appraisal

Examinations

Assessment overview

Paper 1

Multiple Choice 1 hour
30 marks
30 multiple-choice questions
Questions are based on sections 1 and 2 of the subject content.
Externally assessed
28% of the AS Level
14% of the A Level

Paper 2

Fundamentals of Accounting 1 hour 45 minutes
90 marks
Four structured questions
Questions are based on sections 1 and 2 of the subject content
Externally assessed
72% of the AS Level
36% of the A Level

Paper 3

Financial Accounting 1 hour 30 minutes
75 marks
Three structured questions
Questions are based on section 3 of the subject content; knowledge of material from the AS Level subject content is assumed.
Externally assessed
30% of the A Level

Paper 4

Cost and Management Accounting 1 hour
50 marks
Two structured questions
Questions are based on section 4 of the subject content; knowledge of material from the AS Level subject content is assumed.
Externally assessed
20% of the A Level

The AS marks may be carried forward for the final A level result.
If a candidate does not achieve an overall B grade at AS level, he may be required to re-write the AS Papers together with the A2 Papers in his Upper Sixth year.

ENTRY REQUIREMENTS

A B or better in IGCSE Accounting is necessary for entry into the A Level class.
A student who has not studied Accounting at IGCSE level but is judged to be capable of coping with this subject will be considered after careful assessment of his work ethic and academic ability.

CAREERS PROSPECTS

A level Accounting provides the knowledge base for further studies and careers in the following fields:

- Financial Administration
- Marketing
- Banking
- Insurance and Risk management
- Management
- Accountancy

The above list is not exhaustive. Many other careers, in which accounting knowledge forms the base, can be pursued.

ART AND DESIGN (9479)

INTRODUCTION

Art and design are a mode of expression and communication. It is concerned with visual perception and aesthetic experience and forms a language in addition to those used by literary, mathematical, scientific, and factually based subjects. Most of the work is practical/studio based, so that students develop their abilities of observation and analysis of the visual world, sensitivity, skill, personal experience and imagination. They should learn to relate their skills to an enhanced knowledge of their own and other cultures – past and present – and to appreciate practical design problems. The course should stimulate interest and enjoyment, be personally enriching and help to develop the artist's confidence, initiative and sense of adventure and achievement.

EXAMINATIONS

Components 1 and 2 are sat at the end of Lower Sixth (AS Level). The marks for these components are carried forward to the final A level result.

Components 3 is sat at the end of Upper Sixth (A2 Level).

If a student does not obtain good grades at the AS level, then he may re-write Components 1 and 2 together with Components 3 at the end of his Upper Sixth.

Component 1: Coursework (100 marks)

Candidates research, develop and realise aa project from one area of study in the syllabus content. There are two parts to the coursework:

- a portfolio and

- a final outcome.

Externally assessed 50% of the AS

25% of the A level

Component 2: Externally Set Assignment 15 Hours (100 marks)

Candidates choose one starting point to develop into a personal response. There are two parts to the assignment:

- supporting studies, created during the preparation period and

- a final outcome, produced during a supervised period of 15 hours' total duration.

Externally assessed

50% of the AS level

25% of the A level

Component 3: Personal investigation (100 marks)

Candidates investigate a theme, idea, concept or process that is personal to them.

There are two parts to the investigation:

-practical work

-written analysis (1000 – 1500 words).

The practical work and the written analysis must form an integrated submission.

Externally assessed 50% of the A level.

PREREQUISITES AND EXPECTATIONS

Preferably an A or B grade at IGCSE is required for entry to the Advanced Level class, but a determinant desire to succeed and a focussed attitude are more important than natural talent. Students will have to be highly motivated and have a mature attitude as they will be required to work on their own a lot of the time. Four double-periods of lesson time each 6-day cycle. An Art camp/field Trip will also help to develop the course work portfolios. The former will need to be worked on regularly and include theory of colour, composition, human form, different techniques and media as well as visual language.

CAREER PROSPECTS

This course will provide a foundation for further studies in:

Fine Art Fashion and Textile Design Graphic Design

Photography Commercial Art Video & Media Work

Ceramics/Pottery Animation Glass/Metal Work

Advertising Interior Design Jewellery Design

Architecture Landscaping Draftsman ship as well creative careers where there is integration of art

in marketing and mental health therapy.

BIOLOGY (9700)

INTRODUCTION

THEORY:

The study of Biology can be divided into four main divisions:

1. **Molecular Biology** which involves Biochemistry and establishes the basics which will be used in the following sections.
2. **Plant Biology**.
3. **Animal Biology**.
4. **Ecology.**

The A level course covers all four sections.

PRACTICALS

Practicals are linked to the theory. Practical lessons are scheduled as required. During these lessons, the practical techniques and skills are gradually acquired so that students will be ready to write the AS practical exam at the end of their Lower Sixth year.

During the Upper Sixth year, practicals are continued and practicals requiring the planning of experiments, their analysis and evaluation are now included.

SYLLABUS FOLLOWED

Cambridge International Examinations (Biology 9700)

SUBJECT CONTENT OF THE SYLLABUS

Candidates for Cambridge International AS Level Biology study the following topics:

1 Cell structure
2 Biological molecules
3 Enzymes
4 Cell membranes and transport
5 The mitotic cell cycle
6 Nucleic acids and protein synthesis
7 Transport in plants
8 Transport in mammals
9 Gas exchange and smoking
10 Infectious disease
11 Immunity

Candidates for Cambridge International A Level Biology study the AS topics **and** the following topics:

12 Energy and respiration
13 Photosynthesis
14 Homeostasis
15 Control and co-ordination
16 Inherited change
17 Selection and evolution
18 Biodiversity, classification and conservation
19 Genetic technology

Papers 1 and 2 will assess the AS components of the Core syllabus.
Papers 4 will assess the A2 components of the Core syllabus.

EXAMINATIONS

Candidates for Advanced Subsidiary (AS) certification take Papers 1, 2 and 3 (either Advanced Practical Skills 1 or Advanced Practical Skills 2) in a single examination series.

Candidates who, having received AS certification, wish to continue their studies to the full Advanced Level qualification may carry their AS marks forward and take Papers 4 and 5 in the examination series in which they require certification.

Candidates taking the full Advanced Level qualification at the end of the course take all five papers in a single examination series.

Candidates may only enter for the papers in the combinations indicated above.

Candidates may not enter for single papers either on the first occasion or for resit purposes.

All components will be externally assessed.

Component	Weighting	
	AS Level	A Level
Paper 1 Multiple Choice **1 hour** This paper consists of 40 multiple choice questions, all with four options. All questions will be based on the AS Level syllabus content. Candidates will answer all questions. Candidates will answer on an answer sheet. [40 marks]	31%	15.5%
Paper 2 AS Level Structured Questions **1 hour 15 minutes** This paper consists of a variable number of questions, of variable mark value. All questions will be based on the AS Level syllabus content. Candidates will answer all questions. Candidates will answer on the question paper. [60 marks]	46%	23%
Paper 3 Advanced Practical Skills **2 hours** This paper requires candidates to carry out practical work in timed conditions. This paper will consist of two or three experiments drawn from different areas of the AS Level syllabus. Candidates will answer all questions. Candidates will answer on the question paper. [40 marks]	23%	11.5%
Paper 4 A Level Structured Questions **2 hours** This paper consists of a variable number of structured questions each with a variable mark value (Section A) and a choice of one free response style question worth 15 marks (Section B). All questions will be based on the A Level syllabus but may require knowledge of material first encountered in the AS Level syllabus. Candidates will answer on the question paper. [100 marks]	–	38.5%
Paper 5 Planning, Analysis and Evaluation **1 hour 15 minutes** This paper consists of a variable number of questions of variable mark value based on the practical skills of planning, analysis and evaluation. Candidates will answer on the question paper. [30 marks]	–	11.5%

If a student does not achieve an A or B grade at AS level in the Lower Sixth year, he may write all the exams (Papers 1 to Paper 4) at the end of his Upper Sixth year. However, this places a heavy load on the student and all pupils are therefore strongly advised to completely commit themselves to their work in the Lower Sixth year so that they can achieve higher grades.

PREREQUISITES AND EXPECTATIONS

An A or B at IGCSE Biology is required for entry into the A-level class. A student who does not achieve a

good grade at IGCSE Level will be carefully assessed to determine if he will cope with the demands of the syllabus.

This subject is demanding. The volume of subject matter to be studied is large and therefore students need to make a strong commitment to the work. They will be required to reinforce the classroom learning with continual and regular individual research on the topics. This will require a high level of self-discipline and self-motivation. This subject is not for students who are looking for an easy time.

CAREER OPPORTUNITIES

Biology is a subject which is recommended for tertiary Education in the following areas:

1. Medicine/dentistry
2. Veterinary Science
3. Sport medicine
4. Physiotherapy
5. Pathology
6. Genetic Engineering
7. Ecology
8. Marine Biology

BUSINESS (9609)

INTRODUCTION

This subject aims to develop an understanding and appreciation of the nature and scope of business and its role in society. It aims to develop a critical understanding of organizations, the markets they serve and the process of adding value. This involves the consideration of the internal workings and management of organizations and in particular the process of decision making in a dynamic external environment.

This subject also aims to promote awareness that business behaviour can be studied from a range of stakeholders including customer, manager, creditor, owner/shareholder, and employee.

It also aims to develop an awareness of the economic, environmental, ethical, governmental, legal, social, and technological issues associated with business activity.

SYLLABUS

This table gives and overview of the syllabus content for Cambridge International AS and A Level Business.

	AS Level topics	A Level topics
Business and its environment	1.1 Enterprise 1.2 Business structure 1.3 Size of business 1.4 Business objectives 1.5 Stakeholders in a business	6.1 External influences on business activity 6.2 Business strategy
Human resource management	2.1 Human resource management 2.2 Motivation 2.3 Management	7.1 Organisational structure 7.2 Business communication 7.3 Leadership 7.4 Human resource management strategy
Marketing	3.1 The nature of marketing 3.2 Market research 3.3 The marketing mix	8.1 Marketing analysis 8.2 Marketing strategy
Operations management	4.1 The nature of operations 4.2 Inventory management 4.3 Capacity utilisation and outsourcing	9.1 Location and scale 9.2 Quality management 9.3 Operations strategy
Finance and accounting	5.1 Business finance 5.2 Sources of finance 5.3 Forecasting and managing cash flows 5.4 Costs 5.5 Budgets	10.1 Financial statements 10.2 Analysis of published accounts 10.3 Investment appraisal 10.4 Finance and accounting strategy

EXAMINATIONS

Lower Sixth students will write the AS examinations. The results of these exams will be carried forward to contribute to the final A Level grade.
Upper Sixth Students will write the A2 examinations.
If a student does not achieve a good grade in the AS examinations, he can re-write the AS exam papers together with the A2 papers in the Upper Sixth year.

Paper 1

Business Concepts 1 — 1 hour 15 minutes

40 marks

Section A: four short answer questions. There are two parts to the first three questions.

Section B: one essay from a choice of two. There are two parts to each essay.

Questions are based on the AS Level subject content.

Externally assessed

40% of the AS Level

20% of the A Level

Paper 2

Business Concepts 2 — 1 hour 30 minutes

60 marks

Two data response questions. There are six parts to each question.

Questions are based on the AS Level subject content.

Externally assessed

60% of the AS Level

30% of the A Level

Paper 3

Business Decision-Making — 1 hour 45 minutes

60 marks

Five questions based on a case study. There are three parts to Question 3 and two parts to Question 4.

Questions are based on the A Level subject content; knowledge of material from the AS Level subject content is assumed.

Externally assessed

30% of the A Level

Paper 4

Business Strategy — 1 hour 15 minutes

40 marks

Two essay questions based on a case study.

Questions are based on the A Level subject content; knowledge of material from the AS Level subject content is assumed.

Externally assessed

20% of the A Level

PREREQUISITES AND EXPECTATIONS

An A or B grade in IGCSE Business Studies is required for entry into the A level class.
The prospective student should also have a minimum of a C grade in English Language. A student who has not achieved a high enough grade will be carefully assessed to determine if he will cope with the demands of the A level course.

- The Business Studies course requires the student to read extensively. A range of textbooks and study aids will be provided, and students will be expected to study the economic issues of Zimbabwe in depth by reading newspapers and journals.
- Oral and written work will be conducted individually and in groups.
- Much emphasis will be placed on thinking skills, originality of thought and the development of and presentation of arguments, points of view

Note: Business Studies involves a lot of reading and the writing of essays. A student who does not have a strong base in English Language will find this subject very difficult.

CAREER OPPORTUNITIES

Business Studies is a valuable preparation for any student wishing to embark on the following careers:

- International Business
- Banking and Finance
- Advertising and promotion
- Law
- Personnel Selection
- Business Administration
- Information Technology

.....to name just a few.

Knowledge and understanding of Business Studies will be of value in any career.

CHEMISTRY (9701)

INTRODUCTION

THEORY

The study of Chemistry can be divided into three main sections:

1. **Physical Chemistry** which involves a mathematical approach and establishes the basics which will be used in other sections.

2. Inorganic Chemistry which involves a detailed study of the Groups and periods of chemical elements and their compounds.

3. Organic Chemistry which involves a detailed study of carbon compounds.

The A level course covers all three sections.

PRACTICALS

Practicals are linked to the theory. A practical lesson using two periods in a 6-day cycle is timetabled into the course. More lessons are used for practicals as required. During these lessons, the required practical techniques and skills are gradually acquired so that students will be ready to write the AS practical exam at the end of their Lower Sixth year.

During the Upper Sixth year, practicals are continued and practicals requiring the planning, analysis and evaluation of experiments are now included.

SYLLABUS

Cambridge International Examinations (Chemistry – 9701)

SUBJECT CONTENT OF THE SYLLABUS

Physical chemistry

1. Atoms, molecules and stoichiometry
2. Atomic structure
3. Chemical bonding
4. States of matter
5. Chemical energetics
6. Electrochemistry
7. Equilibria
8. Reaction kinetics

Inorganic chemistry

9.1 The Periodic Table: chemical periodicity
9.2 Group II
9.3 Group IV
9.4 Group VII
9.5 An introduction to the chemistry of transition elements
9.6 Nitrogen and sulfur

Organic chemistry

10.1 Introductory topics
10.2 Hydrocarbons
10.3 Halogen derivatives
10.4 Hydroxy compounds
10.5 Carbonyl compounds
10.6 Carboxylic acids and derivatives
10.7 Nitrogen compounds
10.8 Polymerisation

Application of chemistry

(A level only)
11.1 The chemistry of life
11.2 Applications of analytical chemistry
11.3 Design and materials

Lower Sixth will study the AS part of each core section. Upper Sixth will study the whole core syllabus.

EXAMINATIONS

- Candidates for Advanced Subsidiary (AS) certification will take Papers 1, 2 and 3 (either Advanced Practical Skills 1 or Advanced Practical Skills 2) at a single examination series.
- Candidates who, having received AS certification, wish to continue their studies to the full Advanced Level qualification may carry their AS marks forward and take just Papers 4 and 5 in the examination series in which they require certification.

Paper	Type of Paper	Duration	Marks	Weighting	
				AS Level	A Level
1	Multiple Choice	1 hour	40	31%	15%
2	AS Structured Questions	1 hour 15 min	60	46%	23%
3	Advanced Practical Skills 1/2	2 hours	40	23%	12%
4	A2 Structured Questions	2 hours	100		38%
5	Planning, Analysis and Evaluation	1 hour 15 min	30		12%

PREREQUISITES AND EXPECTATIONS

The ability to think in a logical manner is essential.
An A or B symbol in IGCSE Chemistry or an A symbol in Physical Science is required for entry into the A level class.

The volume of subject matter to be studied is daunting and therefore students need to make a strong commitment to the work. They will be required to reinforce the classroom learning with continual and regular revision. They will also be required to research many topics in the syllabus using textbooks and the internet. This will require a high level of self-discipline and self-motivation. This subject is not for students who are looking for an easy time.

CAREER OPPORTUNITIES

Chemistry is a key subject required for further study and careers in the following areas:
medicine/dentistry/biotechnology/veterinary science/pathology

- pharmacy/pharmaceuticals/cosmetic chemistry
- chemical engineering/materials research
- sport medicine/physiotherapy
- geology/environmental chemistry/agricultural and food chemistry
- patent laws/forensic chemistry
- textiles and fabrics chemistry
- toxicology and industrial hygiene

COMPUTER SCIENCE (9618)

The aims of this course are to enable students to develop:

- computational thinking skills
- an understanding of the main principles of solving problems using computers
- an understanding of the component parts of computer systems and how they interrelate, including software, data, hardware, communication and people
- an understanding of the different methods of communication and the functionality of networks and the internet
- the skills necessary to apply this understanding to develop computer based solutions to problems

It is envisaged that students will use the skills and knowledge of computing acquired through this course in one of three ways:

- To provide a general understanding and perspective of the use of computer technology and systems which will inform their decisions and support their participation in an increasingly technologically dependent society.
- To provide the necessary skills and knowledge to seek employment in areas that utilise computing.
- To develop their knowledge and understanding of computing through entry to higher education, where this qualification will provide a useful foundation for further study of computing or more specialist aspects of computing.

SUBJECT CONTENT OF THE SYLLABUS

Content overview

AS Level Content

1 Information representation	1.1 Data Representation 1.2 Multimedia – *Graphics, Sound* 1.3 Compression
2 Communication	2.1 Networks including the internet
3 Hardware	3.1 Computers and their components 3.2 Logic Gates and Logic Circuits
4 Processor Fundamentals	4.1 Central Processing Unit (CPU) Architecture 4.2 Assembly Language 4.3 Bit manipulation
5 System Software	5.1 Operating System 5.2 Language Translators
6 Security, privacy and data integrity	6.1 Data Security 6.2 Data Integrity
7 Ethics and Ownership	7.1 Ethics and Ownership
8 Databases	8.1 Database Concepts 8.2 Database Management System (DBMS) 8.3 Data Definition Language (DDL) and Data Manipulation Language (DML)
9 Algorithm Design and Problem-Solving	9.1 Computational Thinking Skills 9.2 Algorithms
10 Data Types and structures	10.1 Data Types and Records 10.2 Arrays 10.3 Files 10.4 Introduction to Abstract Data Types (ADT)
11 Programming	11.1 Programming Basics 11.2 Constructs 11.3 Structured Programming
12 Software Development	12.1 Program Development Lifecycle 12.2 Program Design 12.3 Program Testing and maintenance

A Level Content

13 Data Representation	13.1 User-defined data types 13.2 File organisation and access 13.3 Floating-point numbers, representation and manipulation
14 Communication and internet technologies	14.1 Protocols 14.2 Circuit switching, packet switching
15 Hardware and Virtual Machines	15.1 Processers, Parallel Processing and Virtual Machines 15.2 Boolean Algebra and Logic Circuits
16 System Software	16.1 Purposes of an Operating System (OS) 16.2 Translation Software
17 Security	17.1 Encryption, Encryption Protocols and Digital certificates
18 Artificial Intelligence (AI)	18.1 Artificial Intelligence
19 Computational thinking and problem solving	19.1 Algorithms 19.2 Recursion
20 Further Programming	20.1 Programming Paradigms 20.2 File Processing and Exception Handling

EXAMINATIONS

Assessment overview

At AS Level candidates take papers 1 and 2. At A Level candidates take all four papers. Calculators must not be used in any paper.

Paper 1 Theory Fundamentals

1 hour 30 minutes

75 marks

Paper 1 will assess sections 1 to 8 of the syllabus content.

Written paper.

Externally assessed. Candidates answer all questions.

50% of the AS Level

25% of the A Level

Paper 3 Advanced Theory

1 hour 30 minutes

75 marks

Paper 3 will assess sections 13 to 20 of the syllabus content.

Written paper.

Externally assessed. Candidates answer all questions.

25% of the A Level

Paper 2 Fundamental Problem-solving and Programming Skills

2 hours

75 marks

Paper 2 will assess sections 9 to 12 of the syllabus content.

Candidates will need to write answers in pseudocode.

Written paper.

Externally assessed. Candidates answer all questions.

50% of the AS Level

25% of the A Level

Paper 4 Practical

2 hours 30 minutes

75 marks

Paper 4 will assess sections 19 to 20 of the syllabus content.

Candidates will submit complete program code and evidence of testing.

Candidates will be required to use either Java, VB.NET or Python programming languages.

Externally assessed. Candidates answer all questions on a computer without internet or email facility.

25% of the A Level

There are three routes for Cambridge International AS & A Level Computer Science:

	Route	Paper 1	Paper 2	Paper 3	Paper 4
1	**AS Level only** (Candidates take all AS components in the same exam series)	✓	✓		
2	**A Level** (staged over two years) Year 1 AS Level*	✓	✓		
	Year 2 Complete the A Level			✓	✓
3	**A Level** (Candidates take all components in the same exam series)	✓	✓	✓	✓

* Candidates carry forward their AS Level result subject to the rules and time limits described in the *Cambridge Handbook*.

Candidates following an AS Level route will be eligible for grades a–e. Candidates following an A Level route are eligible for grades A*–E.

Students will follow a staged assessment route by taking Papers 1 and 2 (for the AS Level qualification) in their Lower Sixth, then papers 3 and 4 (for the full Cambridge International A level) in their Upper Sixth. Students can carry their AS marks to Advanced Level.

PREREQUISITES AND EXPECTATIONS

In order to qualify for this course you ought to have passed Computer Science at IGCSE level with a B or better grade.

This course requires creativity and logical thinking, particularly in the programming sections. This subject is not for students who are looking for an easy time. The course will make extreme demands on your time and effort. Though the course is challenging it is very interesting.

COURSE REQUIREMENTS

Computer Science is a practical subject. Programming and problem-solving will require access to a computer. Students will have access to the Computers at the Computer Science laboratory. However, it is highly recommended that you have a window-based laptop. This will give you more access to practice your programming skills during prep and during holidays. You will also be able to download e-books and other online resources. Beginning January 2021, we stopped issuing hard-copy textbooks

CAREER OPPORTUNITIES

Over the past two decades, the growth of the Internet and advancements in technology have given rise to many new computer-based careers. The technological world in which we live now requires the use of computers in all spheres of human activity. The knowledge and skills acquired in Computer Science will be useful in any career, whether directly involved with computers or otherwise.

A qualification in this subject provides an excellent foundation in the following areas of computing:

- Systems Analysis and Testers
- Hardware engineering
- Software engineering (Programming)
- Website Authoring
- Systems Designing
- Data Analyst
- Artificial Intelligence Developer/Machine Learning Engineer
- Networking and Cyber Security
- Digital Media Processing Specialist

...and as the technology advances so will new careers be created.

DESIGN AND TECHNOLOGY (9705)

INTRODUCTION

Design and Technology has emphasis placed on designing is concerned with designing and manufacturing of innovative artefacts. The students will have the opportunity to investigate and develop special areas of interest within Design and Technology through a coursework project and through one of the following areas:

Why choose Cambridge International AS and A Level Design and Technology?

This syllabus encourages candidates to be innovative and creative and to develop their ability to design high quality products. Through their studies, candidates will:

- develop an awareness of the significance of design and technology to society
- learn more about production processes and industrial practices
- develop critical evaluation skills which they can employ in a variety of technical, aesthetic, economic, environmental, social and cultural contexts.

As a result, candidates will also become discerning consumers of design and technology, able to make informed choices.

2 Syllabus overview

Aims

The aims describe the purposes of a course based on this syllabus.

The aims are to enable students to:

- select and apply appropriate design strategies based on an appreciation of good design principles
- develop knowledge and understanding of materials, tools, equipment, components and processes used in the designing and making of marketable products
- design and make quality products, taking into consideration industrial, business and commercial practices
- develop the verbal, written, digital and visual communication skills required for designing and making
- develop skills in identifying, analysing and drawing conclusions from information relevant to a design need
- understand the aesthetic, economic, ethical, environmental, social and cultural impact of existing and proposed designs on society
- develop innovative thinking when identifying and solving design needs.

Content overview

Candidates for Cambridge International AS Level study Topics 1–12.

1 The design process
2 Design principles
3 Communication
4 Design and technology in society
5 Sustainable design
6 Health and safety
7 Aesthetics and ergonomics
8 Materials and components
9 Stages in materials processing
10 Materials processing
11 Energy and control systems
12 Technology

AS Level candidates also apply the AS Level content and skills in a practical context in the Component 2 coursework.

Candidates for Cambridge International A Level study the AS Level topics **and** the following topics:

13 Industrial practices
14 Business and commercial practices
15 Quantity production
16 Materials processing in industry
17 Quality systems
18 Digital technology.

A Level candidates also apply the AS and A Level content and skills in a practical context in Component 4 coursework.

Assessment overview

AS Level candidates take Paper 1 and Component 2.

A Level candidates take Papers 1 and 3 and Components 2 and 4.

Paper 1

AS Level Written Paper — 2 hours 15 minutes

100 marks

Candidates answer **all** questions.

Questions are based on the AS Level subject content.

Externally assessed

50% of the AS Level

25% of the A Level

Paper 3

A Level Written Paper — 2 hours 30 minutes

100 marks

Candidates answer **all** questions.

Questions are based on the A Level subject content but knowledge of the AS Level subject content is required.

Externally assessed

25% of the A Level

Component 2	Component 4
Product analysis and improvement project	Design, realisation and manufacturing project
50 marks	50 marks
Candidates complete a Product analysis and improvement coursework project.	Candidates complete a Design, realisation and planning for manufacturing in quantity project.
Knowledge of the AS Level subject content is required.	Knowledge of the AS Level and A Level subject content is required.
Internally assessed and externally moderated	Internally assessed and externally moderated
50% of the AS Level	25% of the A Level
25% of the A Level	

PREREQUISITES AND EXPECTATIONS

An A or B grade at either IGCSE or ZIMSEC 'O' Level Design & Technology, Resistant Materials or Technical Graphics or Metalwork is required for entry into the A level class.

Students opting for Design & Technology should have completed the IGCSE Resistant Materials or the ZIMSEC Metalwork, Woodwork or Technical Graphics course and passed with a symbol A or B. Students opting for Graphic Products should have completed and passed Technical Graphics or Technical Drawing and passed with An A or B symbol at IGCSE Level

The student should be innovative, creative and analytical as the subject demands these skills.

A student should also have a strong commitment. He will be expected to show a high level of interaction in the classroom and be self-motivated. A student should be able to work on his own with the coursework. This will require an input on research work.

CAREER OPPORTUNITIES

This course will provide an ideal foundation for further studies in

- Graphic Design
- Architecture
- Boiler making
- Product Designing
- Logo Designing
- Fitting and turning
- Pattern making
- Fabrication
- Electric arc welding
- Gas welding
- Joinery
- Foundry work
- Tool making
- Model making
- Packaging and most disciplines in metal wood and plastic engineering courses

ENGLISH LANGUAGE (9093)

INTRODUCTION

The syllabus aims to develop

- A critical and informed response to texts in a range of forms, styles and contexts
- The interdependent skills of reading, analysis and research
- Effective, creative, accurate and appropriate communication
- A firm foundation for further study of language and linguistics

SYLLABUS

Cambridge International Examinations (English Language - 9093).

EXAMINATIONS

Lower Sixth (AS)

Cambridge International AS Level candidates take:

Paper 1 Passages	Duration	Weighting
The paper contains three questions. Candidates answer two questions: Question 1, and either Question 2 or Question 3. Questions carry equal marks. Externally assessed. 50 marks	2 hours 15 minutes	50%

and

Paper 2 Writing	Duration	Weighting
Two sections: Section A and Section B. Candidates answer two questions: one from Section A and one from Section B. Questions carry equal marks. Externally assessed. 50 marks	2 hours	50%

Upper Sixth (A2)

Paper 3 Text Analysis	Duration	Weighting
The paper contains two questions. Candidates must answer both questions. Questions carry equal marks. Externally assessed. 50 marks	2 hours 15 minutes	25%

and

Paper 4 Language Topics	Duration	Weighting
The paper contains three questions, each on a separate topic area. Candidates answer two questions. Questions carry equal marks. Externally assessed. 50 marks	2 hours 15 minutes	25%

SUBJECT CONTENT OF THE SYLLABUS

- **Students will follow studies that will enable them to**
  Read with understanding and analyse texts written in a variety of forms, and to comment on its effectiveness.
- Have knowledge and understanding of the features of English language (including, At A Level, spoken language and its use in a variety of contexts).
- Have the ability to write clearly, accurately and effectively for different purposes/audiences, using different forms.

PREREQUISITES AND EXPECTATIONS

An A or B in English language at IGCSE level is required for entry into the AS Level English Language class and, eventually A Level should they pass AS level and wish to carry on with the subject. Students with a C grade at IGCSE level will proceed into the AS level English General Paper.

A student will have to read many texts and publications and should therefore enjoy reading before they attempt to study this subject.

CAREER OPPORTUNITIES

A study of English Language should equip students with skills which will be of great value in the following careers:

- Teaching – Schools, Colleges, Universities
- Media jobs – Journalism, Publishing, TV and Radio, Copywriting, Events Management
- Advertising
- Public relations
- Marketing
- Retail Management

- Social Work
- Librarianship
- Archivist
- Lawyer
- Human resources
- Speech Writer
- Information Officer

....and many more.

ENGLISH LITERATURE (9695)

INTRODUCTION

This subject course seeks to encourage an appreciation of an informed personal response to literature in English in a range of texts in different forms and from different periods and cultures. It also aims to promote interdependent skills of reading, analysis and communication. Students should gain in personal development as they read more widely.

SYLLABUS
Cambridge International Examinations (English Literature – 9695)

EXAMINATIONS
Lower Sixth (AS)

Paper 1

Drama and Poetry 2 hours

50 marks

Candidates answer **two** questions: one question from Section A: Drama and one question from Section B: Poetry.

Externally assessed

50% of the AS Level

25% of the A Level

Paper 2

Prose and Unseen 2 hours

50 marks

Candidates answer **two** questions: one question from Section A: Prose and one question from Section B: Unseen.

Externally assessed

50% of the AS Level

25% of the A Level

Upper Sixth (A2)

Paper 3

Shakespeare and Drama 2 hours

50 marks

Candidates answer **two** questions: one question from Section A: Shakespeare and one question from Section B: Drama.

Externally assessed

25% of the A Level

Paper 4

Pre- and Post-1900 Poetry and Prose 2 hours

50 marks

Candidates answer **two** questions: one question from Section A: Pre-1900 Poetry and Prose, and one question from Section B: Post-1900 Poetry and Prose.

Candidates respond to both a poetry and a prose text.

Externally assessed

25% of the A Level

PREREQUISITES AND EXPECTATIONS

An A or B at both IGCSE English Language and IGCSE English Literature is required for entry into the A level class. Students with a lower grade will be considered after careful assessment of their ability to cope with the demands of the subject.

A student will have to read many texts and should therefore enjoy reading before they attempt to study this subject.

CAREER OPPORTUNITIES

A study of English Literature should equip students with skills which will be of great value in the following careers:

- Advertising executive
- Archivist
- Assignment editor
- Author, playwright
- Bibliographer
- Journalist
- Court reporter
- Book/Play/Film critic
- Publisher
- Lawyer
- Librarian
- Reporter
- Public Relations
- Speech Writer
- Editor

..and many more

Environmental Management (8291)

Introduction

Cambridge International AS Level Environmental Management develops a set of transferable skills including handling data, practical problem-solving, and applying the scientific method. Learners develop relevant attitudes, such as concern for accuracy and precision, objectivity, integrity, enquiry, initiative and inventiveness. They acquire the essential scientific skills required for progression to further studies or employment.

Our approach in Cambridge International AS Level Environmental Management encourages learners to be:

Confident, secure in their knowledge, and keen to explore the application of scientific approaches to manage the environment

Responsible, developing efficient and safe scientific practices, recognising the human impact on the environment and working collaboratively to manage this impact

Reflective, able to evaluate evidence to draw informed and appropriate conclusions and recognising that the applications of environmental management have the potential to be both helpful and harmful to the individual, the community and the environment

Innovative, applying problem-solving skills to novel situations and engaging with tools and techniques, including information technology, to develop successful approaches

Engaged, developing an enquiring mind, and conscious of the social impacts of environmental management.

Aims

The aims describe the purposes of a course based on this syllabus.

The aims are to enable students to develop:

- knowledge of natural systems which make life possible on Earth
- an understanding that humans are part of these systems and depend on them
- an appreciation of the diverse influences of human activity on natural systems
- an awareness of the need to manage natural systems
- an understanding of sustainable development to meet the needs of the present, without compromising the ability of future generations to meet their own needs
- a sense of responsibility and concern for the welfare of the environment and all organisms
- an awareness of their own values concerning environmental issues
- an awareness of the values of others
- a willingness to review their own attitudes in the light of new knowledge and experiences
- a sound basis for further study, personal development and participation in local and global environmental concerns.

Content overview

Candidates for Cambridge International AS Level Environmental Management study the following topics:

1 Introduction to environmental management
2 Environmental research and data collection
3 Managing human population
4 Managing ecosystems and biodiversity
5 Managing resources
6 Managing water supplies
7 Managing the atmosphere
8 Managing climate change

AS Level candidates also study investigative skills.

Assessment overview

Paper 1

Principles of Environmental Management 1 hour 45 minutes

80 marks

[Section A: between four and six structured questions, with a range of task types. (60 marks)

Section B: one essay from a choice of two questions. (20 marks)

Externally assessed

50% of the AS Level

Paper 2

Management in Context 1 hour 45 minutes

80 marks

Between four and six structured questions, with a range of task types.

Externally assessed

50% of the AS Level

Prerequisites and Expectations

A basic understanding of the Environmental Management syllabus is essential, with a strong background in Core Geography or Environmental Management at IGCSE being a significant advantage for successfully navigating the course. Additionally, a pass in Core Mathematics will be beneficial for the mathematical subtopics included in the syllabus.

Career Opportunities

Environmental Consultant

Advising organizations on how to minimize environmental impact and comply with regulations.

Ecologist

Studying ecosystems and wildlife to understand and protect biodiversity.

Sustainability Manager

Developing strategies to enhance sustainability within organizations.

Environmental Policy Analyst

Researching and analysing policies related to environmental issues for government or non-profit organizations.

Wildlife Biologist

Conducting research on wildlife species and habitats to inform conservation efforts.

Environmental Educator

Teaching and raising awareness about environmental issues in schools or community programs, this is particularly important in non-governmental organizations.

GEOGRAPHY (9696)

INTRODUCTION

Geography occupies a pivotal position in the understanding and interpretation of social, economic, political, and environmental conditions and change. The subject encourages the students to become aware of the contribution they can make to the understanding of contemporary issues and to the understanding of the complexity of natural systems, their links, and their impact upon the human race. It aims to promote an awareness of the impact of humans on the environment and how this impact can be managed in achieving sustainable development. The emphasis will be the study of real examples to illustrate the variety and complexity of human and physical environments.

The geography course aims to introduce the student to the main components of Physical and Human Geography and the inter-relationships between them. It aims to develop a sense of location, including an appreciation of the complexity and variety of natural and human environments. It should also demonstrate and explain the causes and effects of change over space and time on the natural and human environment.

1 Syllabus overview

1.1 Content

Candidates for Cambridge International AS Level Geography study the following topics:

Core Physical Geography

Hydrology and fluvial geomorphology

Atmosphere and weather

Rocks and weathering

Core Human Geography

Population

Migration

Settlement dynamics

Candidates for Cambridge International A Level Geography study the AS Level topics

and two options from:

Advanced Physical Geography Options

Tropical environments

Coastal environments

Hazardous environments

Hot arid and semi-arid environments

and two options from:

Advanced Human Geography Options

Production, location and change

Environmental management

Global interdependence

Economic transition

From 2027, Advanced Level Geography covers the following:

Paper 3 – Global Environments

two topics from:

- Tropical environments
- Coastal environments
- Hazardous environments
- Arid environments.

Paper 4 – Global Themes

two topics from:

- Climate change impacts and governance
- Environmental issues and management
- Trade, aid and tourism
- Disease and geography.

EXAMINATIONS

1.2 Assessment

For Cambridge International AS and A Level Geography, candidates:

• take Papers 1 and 2 only (for the Cambridge International AS Level qualification)

or

• follow a staged assessment route by taking Papers 1 and 2 (for the Cambridge International AS Level qualification) in one series, then Paper 3 and 4 (for the Cambridge International A Level qualification) in a later series

or

• take Papers 1, 2, 3 and 4 in the same examination series, leading to the full Cambridge International A Level.

All components will be externally assessed.

Component

Weighting

AS Level & A Level

Paper 1

Core Physical Geography 1 hour 30 minutes

Section A: Three data response questions (30 marks)

Section B: One structured question from a choice of three (30 marks)

60 marks

Paper 2

Core Human Geography 1 hour 30 minutes

Section A: Three data response questions (30 marks)

Section B: One structured question from a choice of three (30 marks)

60 marks

Paper 3

Advanced Physical Geography Options 1 hour 30 minutes

Candidates answer questions on two of the optional topics.

Each topic consists of one structured question (10 marks) and a choice

of essay questions (20 marks).

60 marks

Paper 4

Advanced Human Geography Options 1 hour 30 minutes

Candidates answer questions on two of the optional topics.

Each topic consists of one structured question (10 marks) and a choice

of essay questions (20 marks).

60 marks

PREREQUISITES AND EXPECTATIONS

An A or B grade in IGCSE Geography and a good grade in IGCSE English Language are required for entry into the A level class. Those students who achieve a C grade will only be accepted after careful assessment of their ability to cope with the demands of the course.

Geography students are expected to read around the subject extensively and research related issues using textbooks, periodicals and the internet. Students will therefore have to be self-motivated and will need a good measure of self-discipline and self-motivation.

CAREER OPPORTUNITIES

Geography is a good grounding for most careers.

The following careers are directly related to the subject:

- Agriculture
- Land development
- Conservation
- Safari Hunting
- Urban and Rural Development
- The Armed Forces
- Navigation
- Weather Forecasting

However, even careers in Politics and the Medical profession will benefit from knowledge of Geography

HISTORY (9489)

INTRODUCTION

The full course covers Modern European History 1769 – 1939 and International History 1945-1991.

SYLLABUS

Cambridge International Examinations (History – 9489).

EXAMINATIONS

Lower Sixth (AS)

Paper 1 Document question

1 hour 15 minutes
40 marks

1 Question

Candidates answer **one** two-part document question on one of the options given. Candidates must answer both parts of the question they choose.

Externally assessed 40% of the AS Level, 20% of the A Level

Paper 2

Outline study
1 hour 45 minutes
60 marks

2 questions

Candidates answer **two** two-part questions from three on one of the options given. Candidates must answer both parts of the questions they choose.

Externally assessed, 60% of the AS Level, 30% of the A Level

UPPER SIXTH (A2)

Paper 3: ORIGINS AND DEVELOPMENT OF THE COLD WAR 1941- 1949

Paper 4: INTERNATIONAL HISTORY 1945 - 1992

Upper Sixth will write the A2 examinations.
A student who does not achieve good AS grades may re-write the AS components together with the A2 components at the end of the Upper Sixth year.

SUBJECT CONTENT OF THE SYLLABUS

AS LEVEL

International option: International History, 1870–1945

- Empire and the emergence of world powers, 1870–1919
- The League of Nations and International relations in the 1920s
- The League of Nations and International relations in the 1930s
- China and Japan, 1912–45

Note: AS Level topics rotate between papers 1 and 2 year-on-year. The prescribed topic for Paper 1 in any given year is not used for Paper 2.

And these are the papers to be written:

Paper 1 Document question

1 hour 15 minutes

40 marks

1 Question

Candidates answer one two-part document question on one of the options given. Candidates must answer both parts of the question they choose.

Externally assessed 40% of the AS Level 20% of the A Level

A2 LEVEL

Topic 1: US - SOVIET RELATIONS 1950 - 1991

Topic 2: THE SPREAD OF COMMUNISM IN EAST AND SOUTH EAST ASIA 1945 - 91

Topic 3: DECOLONISATION, THE COLD WAR AND THE U.N. IN SUB-SAHARAN AFRICA 1950 - 92

Topic 4: CONFLICT IN THE MIDDLE EAST 1948 - 91.

Candidates will write an interpretation paper and a discursive essay paper.

PRERIQUISITES AND EXPECTATIONS

Ideally candidates should have a B grade or better at IGCSE History. A sound IGCSE English language result is also beneficial. However, special consideration may be given to those students who achieve a C symbol and to those who did not study History at IGCSE level. The most significant skill that is to be developed is probably of evaluating and interpreting events and situations. A wide range of reading is essential for success, not just textbooks but also from the library and private sources.

CAREER OPPORTUNITIES

The skills of evaluation and interpretation developed at A level and University History are recognised far more widely than people realise and are an asset in many walks of life. These include:

- Journalism
- Teaching
- Law and Military Careers

Credits in History are also recognised and welcomed in diverse fields such as

- Politics
- Marketing
- Management
- Media work
- Engineering
- Economics

The other valuable aspect of the study of A level and University History is the understanding of the world we live in that it generates.

MATHEMATICS (9709)

INTRODUCTION

This subject aims to develop the student's mathematical knowledge and skills in a way which encourages confidence and provides satisfaction and enjoyment. It aims to develop an understanding of mathematical principles and to enable the acquisition of a range of mathematical skills which will enable the students to use applications of mathematics in everyday situations and in other subjects that he may be studying. It also aims to develop the ability to analyse problems logically and give the student the mathematical background necessary for further study in this or related areas.

SYLLABUS

Cambridge International Examinations (Mathematics – 9709).

SUBJECT CONTENT OF THE SYLLABUS

This syllabus has been designed to allow certain flexibility to construct Mathematics courses appropriate to

the students.
There are 6 examination components available. Students will write two components for AS Level at the end of their Lower Sixth year and a further two components for A2 at the end of their Upper Sixth year.

The following areas may be studied:

- Pure Mathematics and Mechanics
- Pure Mathematics and Probability & Statistics

The Components written are chosen from the 6 options below depending on the subject areas being studied.

Component	Component Name	Duration	Total Marks	AS Level Weighting	A Level Weighting
Paper 1	Pure Mathematics 1	1 hour 50 minutes	75	60% of AS Level	30% of A Level
Paper 2	Pure Mathematics 2	1 hour 15 minutes	50	40% of AS Level	N/A (AS only)
Paper 3	Pure Mathematics 3	1 hour 50 minutes	75	N/A (A Level only)	30% of A Level
Paper 4	Mechanics	1 hour 15 minutes	50	40% of AS Level	20% of A Level
Paper 5	Probability & Statistics 1	1 hour 15 minutes	50	40% of AS Level	20% of A Level
Paper 6	Probability & Statistics 2	1 hour 15 minutes	50	N/A (A Level only)	20% of A Level

PRERIQUISITES AND EXPECTATIONS

A B grade or better at IGCSE Mathematics or an A grade at ZIMSEC Mathematics is required for entry into the A Level class. Students need to develop a strong work ethic that enables them to work without supervision. The AS course requires a lot of concepts to be learnt in a short time and a student must have the motivation to be able to cope with the workload.

CAREER OPPORTUNITIES

Mathematics is a gateway to many other disciplines and is essential in engineering and the scientific world.

PHYSICS (9702)

INTRODUCTION

THEORY:

The study of Physics at A-Level can be divided into 7 main sections:

1. Mechanics
2. Electricity, Electronics and Electromagnetics
3. Magnetism
4. Oscillations and Waves

5. Atomic and Nuclear Physics
6. Materials and Thermal Physics
7. Modern Physics which involves quantum theory and wave-particle duality

The A-level course covers all seven sections.

PRACTICALS

Practicals are linked to the theory. Lessons are scheduled for practicals as required. During these lessons the required practical techniques and skills are gradually acquired so that pupils will be ready to write the AS practical exam at the end of their Lower Sixth year. During the Upper Sixth year, practicals are continued and practicals requiring the planning, analysis and evaluation of experiments are now included.

Data logging techniques and computer simulations have been incorporated in certain practical aspects of the course.

SYLLABUS

Cambridge International Examinations (Physics - 9702)

EXAMINATIONS

Lower Sixth (AS)

Component 1 (1 hour 15 mins) – 40 Multiple Choice questions
Component 2 (1 hour 15 mins) – Structured questions
Component 3 (2 hours) – Practical

Upper Sixth (A2)

Component 4 (2 hours) – Structured questions
Component 5 (1 hour 15 mins) – A written paper assessing the practical skills of planning, analysis and evaluation.

SUBJECT CONTENT OF THE SYLLABUS

Content overview

Candidates for Cambridge International AS Level Physics study the following topics:

1 Physical quantities and units
2 Kinematics
3 Dynamics
4 Forces, density and pressure
5 Work, energy and power
6 Deformation of solids
7 Waves
8 Superposition
9 Electricity
10 D.C. circuits
11 Particle physics

AS Level candidates also study practical skills.

Candidates for Cambridge International A Level Physics study the AS Level topics **and** the following topics:

12 Motion in a circle
13 Gravitational fields
14 Temperature
15 Ideal gases
16 Thermodynamics
17 Oscillations
18 Electric fields
19 Capacitance
20 Magnetic fields
21 Alternating currents
22 Quantum physics
23 Nuclear physics
24 Medical physics
25 Astronomy and cosmology

Candidates also study practical skills.

PRERIQUISITES AND EXPECTATIONS

An A or B in IGCSE Physics or an A grade in Physical Science is required for entry into the A level class. This subject is very demanding and requires excellent mathematical ability. The student needs to make a strong commitment to the work. He will be required to reinforce the classroom learning with continual and regular revision. This will require a high level of self-discipline and self-motivation.

CAREERS

Physics is a subject which is required for tertiary education in most scientific fields. Students are advised to look at a university prospectus obtained from the careers Teacher and read the entry requirements for the different University courses before they choose the A level subjects, they wish to study.

SPORT & PHYSICAL EDUCATION (8386)

INTRODUCTION

The Sport and Physical Education syllabus is both practical and theoretical, covering Anatomy and Physiology, Biomechanics, Movement Skills and Contemporary Studies in Sport. The AS Level only syllabus helps learners to develop theoretical knowledge of physical education and build their skills, tactical awareness and overall performance in sport and physical activity. The syllabus encourages learners to apply the knowledge they gain to real-world examples, relate their theoretical learning to physical activities to improve and refine how they perform, and understand, and explain global trends in sport, and physical education.

SYLLABUS

AS Level Sport & Physical Education (8386)

The key concepts for Cambridge International AS Level Sport & Physical Education are:

• Applied anatomy, exercise physiology and biomechanics

An understanding of the structure, functions and interrelationships between the skeletal, muscular, circulatory and respiratory systems is essential to analyse how the human body moves in sporting situations and to explain how it adapts to exercise. An introduction to biomechanics enables learners to understand the effects of forces and motion during practical performance.

• Skill acquisition

An understanding of skill acquisition allows learners to explain how movement skills are developed. Models, theories and concepts have been proposed to explain motor skill development and elite sporting performance. Learners will be able to critically evaluate and apply these models, theories and concepts of skill acquisition to specific sporting situations.

• Sociocultural influences

An understanding of the sociocultural concepts of sport and physical education is essential to have an appreciation of the role of physical activity in society. Sociocultural influences, which include regular participation and excellence in sport, have an impact on the changing nature of sport. The use of performance-enhancing drugs and violence in sport are issues that negatively affect sport. Commercialisation of sport increases the pressure on performers as sport becomes big business. An understanding of the use of technology in sport and an ability to evaluate new technology is necessary to achieve success in sport.

• Performance in physical activity

Showing effective performance in physical activities requires the use of a range of skills, techniques, tactics and strategies. Learners apply their theoretical learning to physical activities in order to improve and refine how they perform.

Assessment overview

Candidates will be eligible for grades a–e.

Component 1		Component 2
Theory	1 hour 45 minutes	Coursework
70 marks		70 marks
Structured questions		Candidates choose **two** physical activities from the list in the syllabus (35 marks for each physical activity).
Externally assessed		Internally assessed and externally moderated
50% of the AS Level		50% of the AS Level

Content overview

Candidates study the following topics:

1 Joints, movements and muscles
2 Biomechanics
3 The cardiovascular system
4 The respiratory system
5 Skill and ability
6 Theories of learning
7 Information processing
8 Practice and learning
9 Sociocultural issues
10 Ethics and deviance
11 Commercialisation and the media
12 The use of technology

Examinations

Year 1

Component 1 Theory

Written paper, **1 hour 45 minutes,** 70 marks

This is an internally assessed written component.

Component 2 Coursework

Component 2 Coursework will be internally assessed and carried forward into year 2.

Year 2

Component 1 Theory

Written paper, **1 hour 45 minutes,** 70 marks

This is an externally assessed written component.

Component 2 Coursework

Component 2 Coursework will be internally assessed and externally moderated by Cambridge International. Candidates are assessed in two physical activities from the physical activities available in this syllabus. There are 35 marks available for each physical activity. The assessment of performance will take place in competitive conditioned practices and formal competitive games, competitions or situations.

PREREQUISITES AND EXPECTATIONS.

A basic knowledge of Biology, athletic ability in at least two sports and the ability to express oneself clearly, are an essential pre-requisite to taking this course. Continuing Biology and English Language beyond IGCSE Level would greatly enhance chances of success in this subject. It is not necessary to have done this subject at IGCSE.

CAREER OPPORTUNITIES

- The study of Physical Education will prove useful in the following careers:
- Physiotherapist

- Physical Trainer
  Sports coach
- Marketing of Sports products
- Professional player
- Sports Journalist
- Teacher
- Player's Agent
- Sports Team Manager

TRAVEL AND TOURISM (9395)

Mission Statement

The Travel and Tourism department aims to provide students with a comprehensive understanding of the travel and tourism industry, equipping them with the knowledge, skills, and values necessary to succeed in their IGCSE, AS Level and A2 Level examinations.

Objectives

1. To develop students' understanding of the travel and tourism industry, including its structure, components, and key players.
2. To equip students with the skills and knowledge required to pass their examinations and prepare them for careers in the travel and tourism industry, including customer service, marketing, and operational management.
3. To promote cultural awareness and appreciation of different destinations and communities.
4. To foster critical thinking, problem-solving, and teamwork skills in students.

Curriculum

The Travel and Tourism department will offer a range of courses that cover topics such as:

1. Introduction to Travel and Tourism
2. Destination Studies
3. Travel Industry Operations
4. Customer Service and Marketing
5. Sustainable Tourism

Travel and Tourism Management

INTRODUCTION

This course encourages students to appreciate the scale and importance of the travel and tourism industry in the world and recognize the positive and negative impacts the industry may have on people, environments and economies.
Students learn that the travel and tourism industry is dynamic in nature and how the industry responds to change e.g. external factors such as changing customer needs and expectations and developments in ICT.

The course encourages students to learn practical and technical skills relevant to the industry, enabling them to deal with a range of complex situations and problems.

ASSESMENT OVERVIEW

Paper 1

Themes and Concepts 2 hours

75 marks

Candidates answer three questions. Each question is subdivided into four parts and may be based on stimulus material. Questions are based on topics 1–4 of the subject content.

Externally assessed

50% of the AS Level

25% of the A Level

Paper 2

Planning and Managing a Travel and Tourism

Event Coursework

50 marks

Candidates work on a project which involves planning and managing a travel and tourism event. Candidates work in a team but present their project individually. This paper assesses Topic 5 of the subject content.

Internally assessed and externally moderated

50% of the AS Level

25% of the A Level

A Level

Paper 3

Destination Marketing 1 hour 30 minutes

50 marks

Candidates answer two questions. Each question is based on stimulus material and subdivided into three parts. Questions are based on topic 6 of the subject content; knowledge of material from the AS Level subject content is assumed.

Externally assessed

25% of the A Level

Paper 4

Destination Development and Management

1 hour 30 minutes

50 marks

Candidates answer two questions. Each question is based on stimulus material and subdivided into three parts. Questions are based on topic 7 of the subject content; knowledge of material from the AS Level subject content is assumed.

Externally assessed

25% of the A Level

ENTRY REQUIREMENTS

Students are not expected to have studied Travel and Tourism previously.

CAREER OPPORTUNITIES

Career opportunities in the Travel and Tourism industry are endless, and jobs are available in the following sectors of the industry: -

- Travel Agent
- Tour Operator
- Wholesaler
- Cruising
- Events
- Tourism Services
- Transport
- Visitor Information
- Advertising

SUMMARY OF 'A' LEVEL SUBJECT REQUIREMENTS

The following is a summary of the requirements of individual 'A' level subjects. These have been decided by the respective Heads of Department with their experience and knowledge of 'A' level syllabuses and analysis of the exam results over a long period of time. They are intended to direct students away from subjects they are unlikely to cope with and towards the subjects they are likely to perform well in. There will be some flexibility in situations where the IGCSE exam outcome differs widely from that predicted by the subject teacher.

Subject	Minimum Requirement(s) at IGCSE
Accounting	B grade in Accounts
Art & Design	B grade in Art & Design
Biology	B grade in Biology
Business Studies	B Grade in Business Studies + C in English language
Chemistry	B in Chemistry or A in Physical Science
Computer Science	B in Computer Science
Design & Technology	B in Design & Technology (B at ZIMSEC also accepted)
English Language	B in English Language
English Literature	B in English language and B in English Literature
Geography	B in Geography
History	B in History
Mathematics	B in Mathematics
Physics	B in Mathematics
Physical Education	C in Physical Education or Biology
Travel & Tourism	C in Travel & Tourism