IGCSE CURRICULUM BOOKLET

2023 – 2024

NEXUS INTERNATIONAL SCHOOL SINGAPORE

Nexus International School (Singapore), 201009668C, 21 March 2023 to 20 March 2027

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Introduction

The curriculum offered in years 10 and 11 at Nexus International School (Singapore) builds upon the skills and attributes developed in years 7 to 9. All learners follow a two-year programme leading to the award of International General Certificates of Secondary Education (IGCSE) in a range of subjects. Courses are authorised and qualifications awarded by Cambridge Assessment International Examinations (CAIE) or Edexcel.

The curriculum includes the core subjects of English, Mathematics, Coordinated Science, and Global Perspectives. In addition to the core subjects, learners choose up to four additional IGCSE subjects from a range of options. Depending on their language skills, some of our Bi- and Multilingual learners have access to an English Foundation course leading to an IELTS examination, which is recognised by universities as a benchmark of English proficiency.

The curriculum in years 10 and 11 encourages learners to:

- Develop oral and practical skills;
- Develop an investigative approach;
- Use initiative to solve problems;
- Apply skills, knowledge and understanding to novel situations;
- Undertake individual projects and learn to collaborate as part of a team;
- Become more effective as independent learners.

IGCSE courses are designed to be accessible to all learners in years 10 and 11 and all of our examinations are graded from A* to G or 9 to 1.

Learning Area Leaders, in consultation with parents and learners, determine the level of each course of study that is appropriate for each learner. The subjects available in our IGCSE programme have been selected with the intention of providing a broad and balanced curriculum, which gives learners an excellent foundation for the International Baccalaureate Diploma Programme (IBDP).

We provide our learners with information and guidance about the most appropriate subject choices so that they can achieve their best and have a good foundation for their future studies. This curriculum booklet is a first point of information and, as always, we are happy to offer individual advice and support to our learners as they make their choices.

I hope that you find the information useful. Please feel free to contact us if you require further assistance.

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Years 10 and 11 Curriculum Guide

INTRODUCTION

In common with many international schools, learners in years 10 and 11 at Nexus study for IGCSE examinations; the international version of the UK GCSE qualification. These programmes are two years long starting in August of Year 10 and finishing with external examinations in Term 4 of Year 11. Please note the school has no control over the timing of IGCSE dates and times and these may fall within school holidays, evenings and public holidays. You can find out more about the IGCSE qualifications from each awarding body at http://www.cambridgeinternational.org/ and https://qualifications.pearson.com/en/home.html

CAIE and Edexcel use different grading systems for IGCSE. Both are equally valued.

CAIE	A*		A	B		C	D		E	F		G	U
EdExcel	9	8	7	6	5	4	3		2	1			U

All learners at Nexus International School (Singapore) study the following core subjects:

- English (offered at three levels: English First Language, English as a Second Language and English Literature)
- Mathematics (offered at two levels: Mathematics A Foundation, Mathematics A Higher). Further Pure Mathematics is offered as an additional qualification.
- Science (most learners take Double Award; however, we are also able to offer Single Award and Triple Science options)
- Global Perspectives
- Languages other than English (currently Chinese or French IGCSE or Conversational Spanish)

In addition to these core subjects, learners choose one subject from each of the three subject option choice blocks. These subject choice blocks are reviewed each year to reflect new subjects, learner demand and the number of learners on roll. It is advisable to spend time researching the best combination of subjects for you, considering your personal preference, enjoyment and possible future careers.

Year 10, 2023-24

Block 1	Block 2	Block 3
Business Computer Science Design Technology Economics Geography Physical Education Triple Science	Art and Design Business Economics History Music Triple Science	Business Computer Science Drama Economics Geography IELTs Further Pure Mathematics Music Physical Education

Year 11, 2023-24

Block 1	Block 2	Block 3
Business Computer Science Design History IELTS Music Physical Education	Art and Design Business Economics Geography History Physical Education Triple Science BML	Business Computer Science Drama Economics Further Pure Maths Geography BML

Underpinning the Nexus IGCSE curriculum are our mission, vision and values and the IB Learner Profile.

LEARNERS WHO FIT THE IB LEARNER PROFILE ARE:

Inquirers - They develop their natural curiosity. They acquire the skills necessary to conduct inquiry and research and show independence in learning. They actively enjoy learning and this love of learning will be sustained throughout their lives.

Knowledgeable - They explore concepts, ideas and issues that have local and global significance. In so doing, they acquire in depth knowledge and develop understanding across a broad and balanced range of disciplines.

Thinkers - They exercise initiative in applying thinking skills critically and creatively to recognise and approach complex problems, and make reasoned, ethical decisions.

Communicators - They understand and express ideas and information confidently and creatively in more than one language and in a variety of modes of communication. They work effectively and willingly in collaboration with others.

Principled - They act with integrity and honesty, with a strong sense of fairness, justice and respect for the dignity of the individual, groups and communities. They take responsibility for their own actions and the consequences that accompany them.

Open-minded - They understand and appreciate their own cultures and personal histories, and are open to the perspectives, values and traditions of other individuals and communities. They are accustomed to seeking and evaluating a range of points of view, and are willing to grow from the experience.

Caring - They show empathy, compassion and respect towards the needs and feelings of others. They have a personal commitment to service, and act to make a positive difference to the lives of others and to the environment.

Risk-takers - They approach unfamiliar situations and uncertainty with courage and forethought, and have the independence of spirit to explore new roles, ideas and strategies. They are brave and articulate in defending their beliefs.

Balanced - They understand the importance of intellectual, physical and emotional balance to achieve personal well being for themselves and others.

Reflective - They give thoughtful consideration to their own learning and experience. They are able to assess and understand their strengths and limitations in order to support their learning and personal development.

ASSESSMENT

Assessment is an integral part of teaching and learning at Nexus. The main purposes are assessment *of* learning and assessment *for* learning. Teachers carry out assessment in order to:

- Find out what the learners have achieved in terms of their acquisition of knowledge, skills, concepts and attitudes;
- Provide information to inform future teaching and learning;
- Involve learners in self-assessment to improve motivation and self-regulation;
- Help learners set their own achievable targets;
- Provide the teacher with feedback to inform planning and teaching;
- Provide information and evidence for reporting;
- Develop self-confidence in learners and support their progression.

Regular feedback will be shared with learners and families through Canvas. Summary reports in the Parent Portal each term show the grades the learners are working at.

In Term 4 of Year 10, learners sit trial examinations which provide an insight into their progress.

Early in Term 3 of Year 11, all learners sit further trial exams. These exams assess what they have learned throughout the programme since the start. It is, therefore, important that learners revise all the work they have covered.

Trial exams cover as much of the syllabus as is possible at that time, and are intended to be summative in nature, meaning that they give learners a clear picture of where their attainment lies at that moment in time.

Additionally, and perhaps more importantly, the trial exams are intended to be formative in that they give both the learner and teacher guidance on where weaknesses and strengths lie, with the aim of improvement and progression.

Regular feedback is given to learners during the courses and we also report to parents each term about the learner's current attainment and suggested short-term targets to help learners achieve their long-term goals.

HOME LEARNING

Home learning is important because it provides learners with:

- An opportunity to follow the passions and interests they develop in things they are learning;
- Consolidation and fluency-building opportunities that build subject confidence;
- Inquiry and investigative opportunities to deepen knowledge and challenge themselves;
- Vital practice of Approaches to Learning (ATL) skills such self-management and organisation.

Home learning will be relevant and have clear learning intentions that are related to curriculum goals. Most parents expect their children to undertake home learning and it is one way we develop a strong learning focused relationship between learners, teachers and parents. Home learning provides an opportunity to share formative feedback and help a learner reach their goals. The amount of home learning is not fixed and will increase as the learner moves up the school to meet the demands of each curriculum. There is an expectation that secondary learners will become more independent and autonomous as they move up the school, learning how to prioritise different subject demands and deadlines.

Home learning is shared with learners and parents through Canvas and deadlines will allow learners to complete it to the best of their ability. Home learning will never be set for the next day, there will always be a few days between setting and submission. Home learning does not always have to be written and subject areas will select activities that best support the curriculum goals.

Ultimately learners will need to apply learning to new and unfamiliar contexts to be successful, home learning can provide opportunity to do this. For home learning to be useful, both teachers and learners must use the information gained from the home learning to adjust teaching and learning in order to meet the learner's needs.

Parents / Guardians should support their children to complete home learning by encouraging them to do the work at a regular time each night, in a suitable location free from distractions. By helping children understand what is expected and checking what home learning has been set, parents can gain an insight into what is being learned and help their child feel the family is part of the learning journey. Discussing learning rather than tasks in the home environment strengthens the connections between home and school and ultimately empowers the learner. Work should always be authentically completed by the learner and not be plagiarised or the work of an adult at home. If your child / ward is struggling with a task please let the class teacher know. It is never the intention to set home learning that causes undue anxiety.

Home Learning at IGCSE level is important as it supports the taught and assessed curriculum. Learners are expected to complete their tasks, as well as they can, by the specified date and be proactive in seeking clarification when needed. Learners can expect to spend approximately one and a half to two hours per night on homework. This is, however, only a guide as many of the assignments given are long term and require learners to develop good time management skills.

TUTOR GROUPS

Learners are placed in a tutor group that is overseen by a tutor. Learners meet their tutors every day for reflection time and also for a Tutorial period of 60 minutes duration per fortnight. Tutors are the first point of contact for learners who are experiencing difficulties in any area of their school life.

THE TUTORIAL PROGRAMME

Aims

At Nexus International School (Singapore) we aim to ensure that everyone:

- Works within an atmosphere where individuals are valued and self-esteem is enhanced;
- Gains sufficient knowledge with which to make informed choices concerning moral issues;
- Prepares for adult life.

In years 10 and 11, the tutorial programme builds upon the skills, concepts and knowledge introduced during years 7 to 9. In addition to the weekly tutorial session, outside speakers are invited into school and our own subject specialists also supplement the programme.

An integrated approach ensures that the skills, concepts and knowledge that are cultivated in the mainstream curriculum are reinforced in the tutorial programme. Often, objectives from more than one strand of the programme are covered in the same unit; for example, an activity that focuses on personal and social skills may also develop learners' research skills.

LEARNING SUPPORT

Nexus International School (Singapore) offers an inclusive learning environment that supports all learners within regular classroom settings, alongside their peers, regardless of year level or key stage.

Learning Support Integrators work collaboratively with classroom teachers and subject specialists, as well as learners and parents, to identify, understand and address learning needs to ensure each learner is engaged, confident and challenged to achieve. This collaboration includes observations and data-gathering prior to implementing appropriate and effective strategies and resources to support all learning, as well as ongoing monitoring and reviews. They also provide support and guidance to curriculum planning meetings and whole staff professional learning and development. In addition to this where necessary learners can be assessed for examination accommodations such as extra time or the ability to word process examinations.

ENGLISH LANGUAGE SUPPORT

At Nexus International School (Singapore), a team of qualified language teachers work closely with class and subject teachers to ensure that English language learners are fully supported at every level and in every subject. Teachers are given guidance in developing appropriate subject content and in using effective teaching strategies for English language learners. Regular assessments and monitoring of learner progress ensure that effective strategies are in place and that individual needs are identified and met. Where appropriate, individual learning programmes further extend and enrich the language development of learners as they progress through the school. A special emphasis is placed on ensuring that IGCSE and IB learners are given supplementary English language lessons and a high level of in class support.

PERSONAL AND SOCIAL COUNSELLING

Nexus International School (Singapore) employs two full-time, registered Counsellors who are available to support individual learners and to meet with families and other agencies as appropriate. The Counsellors are also involved in planning and developing whole school initiatives such as Restorative Relationships and Peer-to-Peer Support. Our Counsellors are bilingual and can support our bilingual learners who would prefer to be supported in Chinese.

CAREERS GUIDANCE

The career elements of the Tutorial Programme help to prepare learners for the opportunities, responsibilities and experiences of adult life. This includes the development of career management skills with a clear focus on the best fit between school choices, university degree and career goals for individual learners. Learners are encouraged to build on their particular interests and strengths during their IGCSEs.

CO-CURRICULAR ACTIVITY (CCA) PROGRAMME

The school organises a comprehensive programme of co-curricular activities for learners, which operates from Monday to Friday. The Secondary School sessions occur both at lunchtimes and after school, with programmes coordinated to ensure that all learners have adequate access to school facilities. As learners progress through the school the range of activities becomes more varied and provides learners with opportunities to connect with other schools both locally and regionally.

Enrolment for the various CCAs is online and a wide range of activities is posted each term.

SPORT

The school employs a Sports Director whose role is to organise the various sports and swimming teams, ensure that each has a manager and coach and to liaise with other schools to ensure regular opportunities for inter-school fixtures and competition.

Subjects

The following pages contain detailed descriptions of the individual IGCSE courses available. There are the following core subjects:

- First Language English *
- English Literature *
- English as a Second Language *
- Mathematics **
- Science (Double Award)**
- Global Perspectives
- Language other than English: ***
    - French (Foreign Language)
    - Chinese (Mandarin) - Foreign Language
    - First Language Chinese
    - Spanish

* Please note that English is offered in the form of three different learning pathways. Learners make appropriate course choices in consultation with teachers.

** Please note that we offer three IGCSE Mathematics qualifications including Further Pure Mathematics; learners will be guided to the most appropriate course in consultation with teachers.

*** Please note that learners must choose an additional language that is not English.

The following are optional subjects:

- French (Foreign Language)
- Chinese as First Language
- Chinese (Mandarin) as Foreign Language
- Chinese (Mandarin) as Second Language
- Geography
- History
- Business
- Economics
- Art and Design
- Music
- Drama
- Computer Science
- Physical Education
- Foundation English (Support)
- Triple Science
- Further Pure Mathematics
- Design & Technology

CORE SUBJECT : FIRST LANGUAGE ENGLISH

Cambridge IGCSE 0500

AIMS

The aims of the syllabus are to:

- Enable learners to understand and respond to what they hear, read and experience
- Enable learners to communicate accurately, appropriately, confidently and effectively
- Encourage learners to enjoy and appreciate a variety of language
- Complement learners' ability to work with information and ideas in other areas of study, for example, by developing skills of analysis, synthesis and the drawing of inferences
- Promote learners' personal development and an understanding of themselves and others

COURSE OUTLINE

The First Language Course is a two year programme. Learners in Years 10 and 11 are exposed to a variety of text types, ideas, concepts, language styles and information in order to prepare for trial exams in the first year of the course and final exams in the second year of the course.

Learners explore a range of units such as:

- Descriptive and narrative writing
- Argumentative writing
- Text analysis (a range of texts are selected to engage the learners)
- Transformational Writing - Reading for meaning; writing to form
- Literature analysis skills

ASSESSMENT

Component	Description	Time	Weighting
Paper 1	Reading Passages • Structured and extended writing questions	2 hours	50%
Paper 2 or	Directed Writing and Composition • Extended writing question and a composition task	2 hours	50%
Paper 3	Coursework Portfolio • Three extended writing assignments	Across the course	50%

Learners at Nexus take Paper 1 and Paper 2 to fulfil assessment requirements of the Cambridge First Language Course. This assessment schedule makes most productive use of teaching and learning time, while developing learners' skills in English and preparing them for further study.

Teachers and learners work collaboratively to personalise tasks, reflect on skills or concepts learned and implement strategies to further encourage learners to work towards their goals or targets.

Testing at the end of units or topics; observing and responding; listening; asking questions; note taking, research skills, self assessment and peer assessment are some of the tools employed.

CORE SUBJECT : ENGLISH LITERATURE

Edexcel IGCSE English Literature 4ET1 (alongside Cambridge IGCSE First Language English 0500)

AIMS

The syllabus aims are to encourage and develop candidates' ability to:

- engage with and develop the ability to read, understand and respond to a wide range of literary texts from around the world
- develop an appreciation of the ways in which writers achieve their literary effects
- to develop the skills needed for literary study
- explore, through literature, the cultures of their own and other societies
- find enjoyment in reading literature and understand its influence on individuals and societies.

COURSE OUTLINE

The English Literature course is a two year programme. Learners in Years 10 and 11 are exposed to a variety of text types, language conventions, cultural and social references and ideologies through the study of texts written in English from a range of contexts and backgrounds. Trial exams are undertaken in the first year of the course and final exams in the second year of the course.

Units cover a diverse range of text types including Poetry, Prose and Drama from different cultures, genres and time periods.

ASSESSMENT

Component	Description	Time	Weighting
Paper 1 Poetry and Modern Prose	Written Examination	2 hours	60%
Either Paper 2 Modern Drama/ Literary Heritage	Written Examination	1 hour 30 minutes	40%
Or Paper 3 Modern Drama/ Literary Heritage	Coursework Assignments	Unspecified	40%

* Paper 3 is internally assessed and externally moderated

Learners at Nexus take Paper 1 and Paper 2 to fulfil assessment requirements of the Edexcel Literature Course. This assessment schedule makes most productive use of teaching and learning time, while developing learners' skills in Literature and preparing them for further study.

CORE SUBJECT : ENGLISH AS A SECOND LANGUAGE

Cambridge IGCSE 0511 (Count-in Speaking)

AIMS

The aims of Cambridge IGCSE English as a Second Language are to:

- Develop learners' ability to use English effectively for the purpose of practical communication
- Form a solid foundation for the skills required for further study or employment using English as the medium
- Develop learners' awareness of the nature of language and language-learning skills
- Promote learners' personal development

COURSE OUTLINE

The English as a Second Language course is a two year programme. Learners in Years 10 and 11 are exposed to a variety of text types, language conventions, opinions, ideas and attitudes as they prepare for trial exams in the first year of the course and final exams in the second year of the course.

Learners develop language skills throughout a range of units including:

- Communication across the world
- Travel and adventure
- Community
- Family and beyond

Learners continually build skills by creating vocabulary banks, interpreting and inferring information, writing in different contexts and for different audiences and reviewing grammatical conventions. They develop cohesive writing skills with an appreciation for the structures and features of the target language.

ASSESSMENT

Component	Description	Time	Weighting
Paper 1 or	Reading and writing (Core)	1 hour 30 minutes	60%
Paper 2	Reading and writing (Extended)	2 hours	60%
Paper 3 or	Listening (Core)	approx. 40 minutes	20%
Paper 4	Listening (Extended)	approx. 50 minutes	20%
Component 5	Speaking	approx. 10-15 minutes	20%

CORE SUBJECT : MATHEMATICS A (HIGHER)

Edexcel IGCSE 4MA1

AIMS

This syllabus should enable learners to:

- Acquire a foundation of mathematical skills appropriate to further study and continued learning in mathematics;
- Develop a foundation of mathematical skills and apply them to other subjects and to the real world;
- Interpret mathematical results and understand their significance;
- Develop strategies, patience and persistence when solving problems;
- Develop a positive attitude towards mathematics which encourages enjoyment, fosters confidence and promotes enquiry and further learning;
- Appreciate the beauty and power of mathematics;
- Appreciate the difference between mathematical proof and pattern spotting;
- Appreciate the interdependence of different branches of mathematics and the links with other disciplines;
- Appreciate the international aspect of mathematics, its cultural and historical significance and its role in the real world;
- Read mathematics and communicate the subject in a variety of ways.

COURSE OUTLINE

The following topics are covered:

- Decimals
- Special numbers, powers and roots
- Fractions
- Percentages
- Ratio and proportion
- Indices and standard form
- Degree of accuracy
- Set language, notation and Venn diagrams
- Algebraic manipulation
- Expressions, formulae and rearranging formulae
- Linear equations and inequalities
- Sequences
- Real-life graphs
- Linear graphs
- Quadratic equations and graphs
- More complex graphs and transformation of graphs
- Simultaneous equations
- Function notation
- Calculus
- Compound measure
- Geometry of shapes
- Perimeter, area and volume
- The Theorem of Pythagoras
- Trigonometry
- Circle properties and theorems
- Advanced trigonometry
- Similarity and congruence
- Vectors
- Graphical representation of data
- Statistical measures
- Probability

ASSESSMENT

Learners sit two written papers. The assessment outline is shown in the following table:

Component	Description	Time	Weighting
Paper 1H	Calculator; range of question types, 100 marks	120 minutes	50%
Paper 2H	Calculator; range of question types, 100 marks	120 minutes	50%

All papers are externally marked.

CORE SUBJECT : MATHEMATICS A (FOUNDATION)

Edexcel IGCSE 4MA1

AIMS

This syllabus should enable learners to:

- Develop the mathematical knowledge and oral, written and practical skills to bring confidence, satisfaction and enjoyment;
- Read, write and talk about mathematics in a variety of ways;
- Develop numeracy skills, carry out calculations and understand the significance of the results obtained;
- Apply mathematics in everyday situations and develop an understanding of the part which mathematics plays in the world around them;
- Solve problems, present the solutions clearly, check and interpret the results;
- Develop an understanding of mathematical principles;
- Recognise when and how a situation may be represented mathematically, identify and interpret relevant factors and, where necessary, select an appropriate mathematical method to solve the problem;
- Use mathematics as a means of communication with emphasis on the use of clear expression;
- Develop an ability to apply mathematics in other disciplines;
- Develop the abilities to reason logically, to classify, to generalise and to prove;
- Appreciate patterns and relationships in mathematics;
- Produce and appreciate imaginative and creative work arising from mathematical ideas;
- Appreciate the interdependence of different branches of mathematics;
- Acquire a foundation appropriate to further study of mathematics and of other disciplines.

COURSE OUTLINE

The following topics are covered:

- Integers, place value and decimals
- Special numbers and powers
- Fractions
- Percentages
- Ratio and proportion
- Set language, notation and Venn diagrams
- Indices and standard form
- Algebraic expressions, formulae and rearranging
- Linear equations and inequalities
- Sequences
- Real-life graphs
- Linear and quadratic equations and graphs
- Simultaneous equations
- Measures, bearings and scale drawings
- Symmetry, shapes, parallel lines and angle facts
- Interior and exterior angles of polygons
- Compound measures
- Perimeter, area and volume
- Circles and cylinders
- Transformations
- Pythagoras' theorem and trigonometry
- Similarity and congruence
- Constructions
- Graphical representation of data
- Statistical measures
- Probability

ASSESSMENT

Learners sit two written papers. The assessment outline is shown in the following table:

Component	Description	Time	Weighting
Paper 1F	Calculator; range of question types, 100 marks	120 minutes	50%
Paper 2F	Calculator; range of question types, 100 marks	120 minutes	50%

All papers are externally marked.

All learners begin Year 10 following the Mathematics A (Higher) course. After the trial examinations, teachers and the Learning Area Leader will determine whether to recommend the Foundation course as a more appropriate alternative.

CORE SUBJECT : SCIENCE (DOUBLE AWARD)

*Edexcel IGCSE **4SD0***

AIMS

To provide a worthwhile educational experience, through well designed studies of experimental and practical science, whether or not they go on to study science beyond this level. In particular, learners' studies should enable them to acquire understanding and knowledge of the concepts, principles and applications of biology, chemistry and physics and, where appropriate, other related sciences so that they may:

- Become confident citizens in a technological world, able to take or develop an informed interest in matters of scientific importance
- Recognise the usefulness, and limitations, of scientific method and appreciate its applicability in other disciplines and in everyday life
- Be suitably prepared for studies beyond Edexcel IGCSE in pure science, in applied sciences or in science-dependent vocational cases

To develop abilities and skills that:

- Are relevant to the study and practice of science
- Are useful in everyday life
- Encourage safe practice
- Encourage effective communication

To stimulate:

- Curiosity, interest and enjoyment in science and its methods of enquiry
- Interest in, and care for, the environment

To promote an awareness that:

- The study and practice of science are co-operative and cumulative activities subject to social, economic, technological, ethical and cultural influences and limitations
- The applications of science may be both beneficial and detrimental to the individual, the community and the environment
- The concepts of science are of a developing and sometimes transient nature
- Science transcends national boundaries and that the language of science is universal

COURSE OUTLINE

The Edexcel IGCSE Science (Double Award) is designed as a two year course of study. The course takes two thirds of the subject content of each of the Edexcel IGCSE separate sciences and blends them into an overall course, which will lead to the award of two IGCSEs. Learners are taught by three teachers: a Biology, Chemistry and Physics specialist. The following topics are covered:

Biology

1: Organisms and Life Processes
- Life Processes
- Variety of Living Organisms

2: Animal Physiology
- Breathing and Gas Exchange
- Food and Digestion
- Blood and Circulation
- Coordination
- Chemical Coordination
- Respiration
- Homeostasis and Excretion
- Reproduction in Humans

3: Plant Physiology
- Plants and Food
- Transport in Plants
- Chemical Coordination in Plants
- Reproduction in Plants

4: Ecology and the Environment
- Ecosystems
- Human influences on the environment

5: Variation and Selection
- Chromosomes, Genes, and DNA
- Cell Division
- Genes and Inheritance
- Natural Selection, Evolution and Selective Breeding

6: Microorganisms and Genetic Modification
- Using Microorganisms
- Genetic Modification

Chemistry

1: Principles of chemistry
- States of matter
- Elements, compounds and mixtures
- Atomic structure
- The Periodic Table
- Ionic bonding
- Covalent bonding
- Chemical formulae, equations and calculations

2: Inorganic chemistry
- Group 1 (alkali metals)
- Group 7 (halogens)
- Gases in the atmosphere
- Reactivity series
- Acids and alkalis
- Acids, bases and salt preparations
- Chemical tests

3: Physical chemistry
- Energetics
- Rates of reaction and Reversible Reactions

4: Organic chemistry
- Introduction to Organic Chemistry
- Crude oil
- Alkanes
- Alkenes
- Synthetic polymers

Physics

1: Forces and motion
- Movement and position
- Forces and shape
- Forces and movement

2: Electricity
- Mains electricity
- Current and Voltage in Circuits
- Electrical Resistance

3: Waves
- Properties of waves
- The electromagnetic spectrum
- Light and Sound Waves

4: Energy resources and energy transfers
- Energy transfers
- Thermal Energy
- Work and power

5: Solids, liquids and Gases
- Density and pressure
- Solids, Liquids and Gases

6. Magnetism and Electromagnetism
- Magnetism and Electromagnetism
- Electric Motors and Electromagnetic induction

7: Radioactivity and Particles
- Atoms and Radioactivity
- Radiation and Half life
- Applications of Radioactivity
- Fission and fusion

8: Astrophysics
- Motion in the Universe
- Stellar evolution

ASSESSMENT

Learners have three examinations in May/June of Year 11.

Component	Description	Time	Weighting
Biology	Multiple-choice questions and short-answer questions on Biology	2 hours	33.3%
Chemistry	Multiple-choice questions and short-answer questions on Chemistry	2 hours	33.3%
Physics	Multiple-choice questions and short-answer questions on Physics	2 hours	33.3%

CORE SUBJECT : GLOBAL PERSPECTIVES

Cambridge IGCSE 0457

AIMS

Global Perspectives develops independent thinking, learning and communication skills. It focuses on issues relevant to today's learners and helps them shape their world perspective by connecting learning with real-world issues. The course is built around a series of topics, each containing issues of global importance. The course is cross-curricular, stretching across traditional subject boundaries, and taps into the way today's learners enjoy learning – including group work, projects and working with other learners around the world. The emphasis is on developing the ability to think critically about global issues where there is always more than one point of view.

Successful Cambridge IGCSE Global Perspectives candidates:

- Are independent, active learners who are empowered to take their place in an ever changing, information-heavy, interconnected world
- Have an analytical, evaluative grasp of key world issues, their causes, effects and possible solutions
- Enquire into and reflect on issues and collaborate with others to find solutions
- Work independently or well as part of a team, are able to direct much of their own learning
- Consider important issues from personal, local and global perspectives and who understand some of the links between the personal, local and global
- Critically assess the information available to them and develop lines of reasoning
- Have a sense of their own, active place in the world
- Can empathise with the needs and rights of others

COURSE OUTLINE

The course is built around a series of topics that focus on global issues, learners will investigate several of these topics over the duration of the two years:

- Belief Systems
- Education for All
- Language and Communication
- Trade and Aid
- Biodiversity and Ecosystems Loss
- Employment
- Law and Criminality
- Fuel and Energy
- Family and Demographic Change
- Poverty and Inequality
- Transport and Infrastructure
- Conflict and Peace
- Climate and Change
- Water, Food and Agriculture
- Disease and Health
- Humans and Other Species
- Technology and the Economic Divide
- Traditional Culture and Identity
- Urbanisation
- Sport and Recreation

ASSESSMENT

Component	Description	Time	Weighting
Component 1	Written Examination ● Four compulsory questions based on a range of sources provided	1 hour 15 minutes	35%
Component 2	Individual Report ● 1500 - 2000 words report on one topic area of personal, local and/or national and global significance	N.A.	30%
Component 3	Team Project ● Team Element: to produce one Outcome and one Explanation as a Collaboration (200-300 words) ● Personal Element: write a Reflective Paper on their research, contribution and personal learning (750-1000 words)	N.A.	35%

OPTIONAL SUBJECTS

The following are optional subjects:

Learners on the Intensive English Language Acquisition programme may select one of these options.

Learners on the Additional English Language Acquisition programme may select two of these options.

All other learners may select three of these options.

- French (Foreign Language)
- Spanish
- Chinese as First Language
- Chinese (Mandarin)- Second Language
- Chinese (Mandarin) - Foreign Language
- Geography
- History
- Business
- Economics
- Music
- Art and Design
- Drama
- Computer Science
- Physical Education
- Triple Science
- Further Pure Mathematics
- Design
- Foundation English (Support)

OPTIONAL SUBJECT : FRENCH (FOREIGN LANGUAGE)

Cambridge IGCSE 0520

AIMS

This course is suitable for learners with some prior knowledge of French.

It aims to:

- Develop their ability to communicate effectively in French
- Offer insights into the culture and society of countries where the language is spoken
- Develop their awareness of the nature of language and language learning
- Provide enjoyment and intellectual stimulation
- Form a sound base of the skills, language and attitudes required for progression to work or further study, either in the target language or another subject area

COURSE OUTLINE

The syllabus content is organised around five broad topic areas that provide contexts for the acquisition of vocabulary and the study of grammar and structures. Through the study of these topic areas, learners gain insight into countries and communities where French is spoken.

The topic areas are:

- Everyday activities
- Personal and social life
- The world around us
- The world of work
- The international world

ASSESSMENT

All candidates sit four separate papers that together make up the IGCSE award. The class teacher conducts and marks the speaking examination, which is then externally moderated.

Component	Description	Time	Weighting
Paper 1	Listening and responding	approx. 50 minutes	25%
Paper 2	Reading and responding	1 hour	25%
Paper 3	Speaking	approx. 10 minutes	25%
Paper 4	Writing	1 hour	25%

OPTIONAL SUBJECT : SPANISH FOREIGN LANGUAGE

Cambridge IGCSE 0530

AIMS

This course is suitable for learners with some prior knowledge of Spanish.

It aims to enable students to develop:

- develop the language proficiency required to communicate effectively in Spanish at level A2 (CEFR Basic User), with elements of level B1 (CEFR Independent User)
- offer insights into the culture and society of countries and communities where Spanish is spoken
- develop awareness of the nature of language and language learning
- encourage positive attitudes towards speakers of other languages and a sympathetic approach to other cultures
- provide enjoyment and intellectual stimulation
- develop transferable skills (e.g. memorising, drawing of inferences) to complement other areas of the curriculum
- form a sound base of the skills, language and attitudes required for progression to work or further study, either in Spanish or another subject area.

COURSE OUTLINE

The subject content is organised in five broad topic areas (A–E below). These provide contexts for the acquisition of vocabulary and the study of grammar and structures. The study of these topic areas enables students to gain an insight into countries and communities where Spanish is spoken. The five topic areas listed below.

- Everyday activities
- Personal and social life
- The world around us
- The world of work
- The international world

ASSESSMENT

All candidates sit four separate papers that together make up the IGCSE award. The class teacher conducts and marks the speaking examination, which is then externally moderated.

Component	Description	Time	Weighting
Paper 1	Listening and responding	approx. 50 minutes	25%
Paper 2	Reading and responding	1 hour	25%
Paper 3	Speaking	approx. 10 minutes	25%
Paper 4	Writing	1 hour	25%

OPTIONAL SUBJECT : FOUNDATIONAL FRENCH

Year 10 and 11, new course starting August 2023

AIMS

The French Foundational course is specifically designed for beginners and learners with limited experience in French. Its main objective is to prepare learners for the International Baccalaureate Diploma Programme (IBDP) French Ab Initio course in years 12 and 13.

Throughout this course, learners will develop the foundational language skills necessary to effectively communicate in French, including speaking, listening, reading, and writing. The course will cover basic grammar and vocabulary, as well as the cultural aspects of the French-speaking world.

The curriculum is structured to provide a solid foundation for learners to build upon, with a focus on developing confidence and fluency in the language. Through a variety of interactive activities and exercises, learners will be engaged in the learning process, building upon their knowledge and skills at a pace that is suitable for their individual needs.

Upon completion of the French Foundational course, learners will have the necessary skills to progress onto the IBDP French Ab Initio course in years 12 and 13. They will have a solid understanding of the language, as well as the cultural nuances that are essential for effective communication.

COURSE OUTLINE

The topic areas are:

- Identities
- Experiences
- Human Ingenuity
- Social Organisation
- Sharing the Planet

ASSESSMENT

The learners will be assessed on the four skills : Speaking, Writing, Reading and Listening.

Each component will be worth 25% of the total.

OPTIONAL SUBJECT : FIRST LANGUAGE CHINESE

Cambridge IGCSE 0509

AIMS

This course, for learners for whom Chinese is their first language, aims to enable or encourage them:

- To communicate accurately, appropriately and effectively in writing
- To understand and respond appropriately to what they read
- To enjoy and appreciate the variety of language
- To complement their other areas of study by developing skills of a more general application (e.g. analysis, synthesis, drawing of inferences)
- To promote their personal development and an understanding of themselves and others

COURSE OUTLINE

Learners read, discuss and write about a broad range of texts, films and documentaries. They read short stories, novels and other written text types, which include articles on current affairs.

Learners often present their ideas to others in presentations and oral summaries, and take part in interactive speaking activities. They write regularly to practise written skills and to share their opinions and give personal evaluations.

ASSESSMENT

All candidates sit two separate papers and these contribute towards the IGCSE award. They both take place in the main exam period and are externally marked.

Component	Description	Time	Weighting
Paper 1	Reading • Question 1: Comprehension questions • Question 2: Summary • Question 3: Classical Chinese text Comprehension	2 hours 15 minutes	50%
Paper 2	Writing • Two composition of 400-600 characters	2 hours	50%

OPTIONAL SUBJECT : CHINESE (MANDARIN) - SECOND LANGUAGE

Cambridge IGCSE 0523

AIMS

This course is for learners with working knowledge in Chinese, and aims to:

- Consolidate their understanding to progress their education or career
- Achieve a thorough understanding of a wider range of registers and styles
- Communcate effectively in different situations
- Provide a level of practical communication ideal for everyday use, more in-depth in languaage stusy

COURSE OUTLINE

The syllabus content is organised around four broad topic areas that provide contexts for the acquisition of vocabulary and the study of grammar and structures. Through the study of these Topic areas, learners gain insight into Chinese language.

The topic areas are:

- Young People and Education
- Society
- The World
- Cultural Diversity

ASSESSMENT

All candidates sit four separate papers that together make up the IGCSE award. The class teacher conducts the speaking examination, which is then externally moderated.

Component	Description	Time	Weighting
Paper 1	Reading and writing	2 hours	60%
Paper 2	Listening	approx 35-45 mintues	20%
Paper 3	Speaking	approx 10-13 minutes	20%

OPTIONAL SUBJECT : CHINESE (MANDARIN) - FOREIGN LANGUAGE

Cambridge IGCSE 0547

AIMS

This course is for learners with some initial experience in Chinese, and aims to:

- Develop their ability to communicate effectively in Mandarin Chinese
- Offer insights into cultures and societies where Mandarin Chinese is spoken
- Encourage positive attitudes towards speakers of other languages and a sympathetic approach to other cultures and civilisations
- Develop an awareness of the nature of language
- Provide enjoyment and intellectual stimulation
- Form a sound base of the skills, language and attitudes required for progression to work or further study, either in the Mandarin or another subject area

COURSE OUTLINE

The syllabus content is organised around five broad topic areas that provide contexts for the acquisition of vocabulary and the study of grammar and structures. Through the study of these Topic areas, learners gain insight into countries and communities where Mandarin Chinese is spoken.

The topic areas are:

- Everyday Activities
- Personal and Social Life
- The World Around Us
- The World of Work
- The International World

ASSESSMENT

All candidates sit four separate papers that together make up the IGCSE award. The class teacher conducts the speaking examination, which is then externally moderated.

Component	Description	Time	Weighting
Paper 1	Listening and responding	approx. 40 minutes	25%
Paper 2	Reading and responding	1 hour 15 minutes	25%
Paper 3	Speaking	approx. 10 minutes	25%
Paper 4	Writing	1 hour 15 minutes	25%

OPTIONAL SUBJECT : GEOGRAPHY

Edexcel IGCSE 4GE1

AIMS

The Pearson Edexcel International GCSE in Geography qualification requires learners to::

- Actively engage in the process of geographical enquiry to develop as effective and independent learners and as critical and reflective thinkers
- Develop their knowledge and understanding of geographical concepts and appreciate the relevance of these concepts to our changing world
- Appreciate the importance of the location of places and environments from a local to global scale and appreciate that people have different views of, and attitudes to, the world, its environments and its issues
- Develop and apply practical geographical enquiry skills and undertake geographical investigations that include both primary and secondary data collection and presentation, analysis and drawing conclusions
- Develop and apply their learning to the real world through fieldwork develop their awareness of global issues and recognise the need for a sustainable future.

COURSE OUTLINE

The Geography course consists of the following topics:

- Coastal environments
- Hazardous environments
- Urban environments
- Economic activity and energy
- Globalisation and migration

As well as general thematic learning, learners also explore a range of perspectives through the use of case studies.

All learners have to complete two fieldwork investigations as part of the course. These will be carried out in Singapore and all learners will need to participate.

ASSESSMENT

Geography IGCSE learners will take two externally assessed examinations at the end of Year 11.

Component	Description	Time	Weighting
Paper 1	Written Paper • Physical Geography	1 hour 10 minutes	40%
Paper 2	Written Paper • Human Geography	1 hour 45 minutes	60%

OPTIONAL SUBJECT : HISTORY

Edexcel IGCSE 4HI1

AIMS

The Pearson Edexcel International GCSE in History qualification requires learners to:

- Acquire knowledge and understanding of selected periods and/or aspects of history, exploring the significance of historical events, people, changes and issues
- Use historical sources critically, in context, recording significant information and reaching conclusions
- Develop an awareness that different interpretations have been constructed about people, events and developments
- Draw conclusions and make historical judgements

COURSE OUTLINE

The History course is split into four key themes:

- A divided union: civil rights in the USA, 1945–74
- Russia and the Soviet Union, 1905–24
- A world divided: superpower relations, 1943–72
- The changing role of international organisations: the League of Nations and the UN, 1919-c2011

ASSESSMENT

History IGCSE learners will be assessed with two externally assessed examinations completed at the end of Year 11.

Component	Description	Time	Weighting
Paper 1	Written Paper • A world divided: superpower relations, 1943–72 • A divided union: civil rights in the USA 1945-1974	1 hour 30 minutes	50%
Paper 2	Written Paper • Russia 1905-24 • The changing role of international organisations: the League of Nations and the UN, 1919-c2011	1 hour 30 minutes	50%

OPTIONAL SUBJECT : BUSINESS

Edexcel International GCSE 4BS1

AIMS

The study of business is about how individuals and groups of people organise, plan, and act to create and develop goods and services to satisfy customers. Business is influenced by and impacts on the cultural, ethical, environmental, political and economic conditions of the day.

Successful Edexcel IGCSE Business learners will be able to:

- Understand different forms of business organisations, the environments in which businesses operate and business functions such as marketing, operations and finance
- Appreciate the role of people in business success

They will also gain lifelong skills, including:

- The ability to calculate and interpret business data;
- Communication skills needed to support arguments with reasons;
- The ability to analyse business situations and reach decisions or judgements.

COURSE OUTLINE

Topics studied include:

- Business Activity and Influences on Business
- People in Business
- Business Finance
- Marketing
- Business Operations

ASSESSMENT

Both papers are externally assessed.

Component	Description	Time	Weighting
Paper 1	Investigating Small Businesses • Four questions, each worth 20 marks • Learners must answer all questions • Sub-questions are a mixture of multiple choice, short-answer, data-response and open-ended questions • Questions are based on a small business - those with up to 49 employees	1 hour 30 minutes	50%
Paper 2	Investigating Large Businesses • Four questions, each worth 20 marks • Learners must answer all questions	1 hour 30 minutes	50%

- Sub-questions are a mixture of multiple choice, short-answer, data-response and open-ended questions
- Questions are based on a large business - those with more than 250 employees

OPTIONAL SUBJECT : ECONOMICS

Edexcel International GCSE 4EC1

AIMS

Economics is a social science that studies how individuals, governments, firms and nations make choices on allocating scarce resources to satisfy their unlimited wants.

Economics learners are given opportunities to:

- Develop their knowledge and understanding of economic terminology, principles and theories
- Develop their basic economic numeracy and literacy, as well as handle simple data, including graphs and diagrams
- Develop their ability to use the tools of economic analysis in particular situations
- Identify and discriminate between differing sources of information and distinguish between facts and value judgements in economic issues
- Develop their ability to use economic skills (with reference to individuals, groups and organisations) to understand better the world in which they live
- Develop their understanding of the economies of developed and developing nations and of the relationships between them; and develop their appreciation of these relationships from the perspective of both developed and developing nations.

COURSE OUTLINE

- The Market System (Microeconomics)
- Business Economics
- Government and the Economy (Macroeconomics)
- The Global Economy

ASSESSMENT

All learners will be assessed by the following components:

Component	Description	Time	Weighting
Paper 1	Microeconomics and Business Economics • Learners must answer all questions • Sub-questions are a mixture of multiple choice, short-answer, data-response and open-ended questions	1 hour 30 minutes	50%
Paper 2	Macroeconomics and the Global Economy • Learners must answer all questions • Sub-questions are a mixture of multiple choice, short-answer, data-response and open-ended questions	1 hour 30 minutes	50%

OPTIONAL SUBJECT : MUSIC

Cambridge IGCSE 0410

AIMS

Learners studying Cambridge IGCSE Music are given the opportunity to:

- listen to and learn about music from a wide range of historical periods and major world cultures
- develop their skills in performing music, both individually and in a group with other musicians
- develop their skills in composing music in a style of their own choice

The aims of the syllabus are to:

- enable candidates to acquire and consolidate a range of basic musical skills, knowledge and understanding, through the activities of listening, performing and composing
- help candidates develop a perceptive and critical response to the main historical periods and styles of Western music
- help candidates to recognise and understand the music of selected non-Western traditions, and thus to form an appreciation of cultural similarities and differences
- provide a foundation for the development of an informed appreciation of music
- provide a foundation for further study in music at a higher level.

PRIOR LEARNING

Learners beginning this course are expected to have some background in instrumental learning. Around two years minimum experience is recommended. Learners can focus on one or more instruments of their choice.

COURSE OUTLINE

Over the two years, learners will perform, compose and study a range of musical styles and cultures to prepare for the listening examination. The coursework will include learning appropriate musical terminology and theory to support listening and composing.

Learners taking IGCSE Music are expected to be a regular member of a variety of Music ensembles at Nexus.

Learners taking this course are required to have regular, ongoing instrumental tuition to support the performing component.

ASSESSMENT

Learners will complete regular composition assignments and listening assessments related to the topic studied. There will be regular solo and ensemble performances to an audience in and beyond class to develop confidence and instrumental skills. Lessons will include feedback and ongoing reflection in order to develop as a critical and reflective musician.

Component	Description	Time	Weighting
Component 1	Listening	1 hour 15 minutes	40%

	• Written examination based on CD recordings supplied by Cambridge		
Component 2	Performing • One individual performance • One ensemble performance	Internally Assessed	30%
Component 3	Composing • Two contrasting compositions	Internally Assessed	30%

OPTIONAL SUBJECT : ART AND DESIGN

Cambridge IGCSE 0400

AIMS

The Cambridge IGCSE Art and Design syllabus encourages a range of skills, stimulates aesthetic awareness, knowledge and critical understanding or art, and provides opportunities for learners to develop a range of skills. Crucially, a personal and independent perspective is encouraged at all times.

The aims are to enable students to develop:

• an ability to record from direct observation and personal experience
• an ability to identify and solve problems in visual and/or other forms
• creativity, visual awareness, critical and cultural understanding
• an imaginative, creative and personal response
• confidence, enthusiasm and a sense of achievement in the practice of art and design
• growing independence in the refinement and development of ideas and personal outcomes
• engagement and experimentation with a range of media, materials and techniques, including new media andtechnologies, where appropriate
• experience of working in relevant frameworks and exploration of manipulative skills necessary to form, compose and communicate in two and/or three dimensions
• a working vocabulary relevant to the subject and an interest in, and a critical awareness of, other practitioners, environments and cultures
• investigative, analytical, experimental, interpretative, practical, technical and expressive skills which aid effective and independent learning.

COURSE OUTLINE

The IGCSE Art and Design course is an exciting and personalised 2 year course that develops learner's understanding and individual passion for Art. Learners will develop knowledge of how to apply a range of techniques and processes used to make art and explore ideas through following the design cycle and researching art movements and artists. The course has two distinct components, 'Coursework' and the 'Externally Set Assignment', both are equal to 50% of the overall grade. For the Coursework component, learners create developmental work which supports the creation of the final coursework practical outcome. The 'Externally Set Assignment' involves learners responding to a chosen question on the official examination paper. They will create preparatory work prior to sitting a timed examination in which they will create a resolved final outcome.

Component 1: Coursework 50% 100 marks

Candidates research, develop and realise a project from one or more of the areas of study and should explore a theme.

There are two parts to the coursework:

– a portfolio and

– a final outcome.

Externally assessed

Component 2: Externally Set Assgignment 50% 8 hours 100 marks

Candidates respond to one starting point set by Cambridge International. Candidates may produce work from the same areas of study as Component 1, but they do not have to.

There are two parts to the assignment:

– supporting studies and

– a final outcome, produced during a supervised test of 8 hours' total duration.

Externally assessed

ASSESSMENT

Component		Weighting
AO1	**Record** • Record ideas, observations and insights relevant to intentions as work progresses	25%
AO2	**Explore** • Explore and select appropriate resources, media, materials, techniques and processes	25%
AO3	**Develop** • Develop ideas through investigation, demonstrating critical understanding	25%
AO4	**Present** • Present a personal and coherent response that realises intentions and demonstrates an understanding of visual language	20%

OPTIONAL SUBJECT : DRAMA

Cambridge IGCSE 0411

AIMS

The over-arching aims of the drama syllabus are to:

- Develop candidates' understanding of drama through practical and theoretical study
- Enable candidates to understand the role of actor, director and designer in creating a piece of theatre
- Develop candidates' acting skills, both individually and in groups
- Enable candidates to develop their skills in devising original drama
- Help candidates communicate feelings and ideas to an audience
- Foster understanding of the performance process and enable candidates to evaluate the various stages of that process
- Encourage enjoyment of drama

COURSE OUTLINE

This course will enable learners to explore the different aspects of theatre making including performing, devising, directing and designing. It will also help to develop the learner's creativity, confidence, communication and analytical skills through the acquisition of knowledge, skills and understanding in Drama production. Learners will engage with a range of drama forms, styles and contexts and will learn to develop ideas for performance in response to a variety of stimulus material. Throughout the course learners will perform as part of an ensemble and as a solo performer.

The course provides an excellent foundation for the study of drama and theatre post 16.

Component	Description	Time	Weighting
Component 1	Written Examination • Devise a piece of drama based on one of the three stimuli and study the extract from the play	2 hours 30 minutes	40%
Component 2	Coursework • One individual piece (3-5 minutes): performance of an extract from a play • Two group pieces (max 15 minutes each): one performance of an extract from a play, one original devised piece	Internally Assessed	60%

OPTIONAL SUBJECT : COMPUTER SCIENCE

Cambridge IGCSE 0478

AIMS

Computer Science introduces to learners an appreciation and understanding of the technology that shapes the lives of billions of people every day. This course is an initial foray into the world of ones and zeros, RAM and ROM, Networks and NAND gates, demystifying the constant interaction between hardware and software that we all depend on.

By the end of the course, learners will have learned to program with written code, apply the computational thinking process, understand the concepts that make Computer Systems and Networks function, and test and evaluate computing solutions.

In addition, learners will take part in a facilitated process during which they are encouraged to develop their own learning strategies, specifically how to make the most of their strengths through technology for the benefit of this and other subjects.

This course prepares learners for further study in Computer Science, and a career in any field or industry where technology has an influence.

COURSE OUTLINE

The course content is split into two sections; Computer Science, and Algorithms, Programming and logic. The final examinations are set roughly along the lines of the two sections, but occasionally with some application of Theory in Paper 2, and some Programming and Database theory in Paper 2.

Computer Science

- Data representation
- Data transmission
- Hardware
- Software
- The internet and its uses
- Automated and emerging technologies

Algorithms, Programming and logic

- Algorithm design and problem-solving
- Programming
- Databases
- Boolean logic

ASSESSMENT

Assessment Objectives		Weighting
AO1	Demonstrates knowledge and understanding of the principles and concepts of computer science	40%
AO2	Apply knowledge, understanding of the principles and concepts of computer science to a given context, including the analysis and design of computational or programming problems	40%
AO3	Provide solutions to problem by: evaluating computer systems, making reasoned judgements, presenting conclusions	20%

Component	Description	Time	Weighting
Paper 1 Computer Science	• 75 marks • Short-answer and structured questions • Questions will be based on Topics 1-6 of the subject content • All questions are compulsory • No calculators are permitted • Externally assessed	1 hour 45 minutes	50%
Paper 2 Algorithms, Programming and Logic	• 75 marks • Short-answer and structured questions and a scenario -based question • Questions will be based on Topics 7-10 of the subject content • All questions are compulsory • No calculators are permitted • Externally assessed .	1 hour 45 minutes	50%

OPTIONAL SUBJECT : PHYSICAL EDUCATION

Cambridge IGCSE 0413

AIMS

This course aims to provide candidates with an opportunity to study both the practical and theoretical aspects of Physical Education. It is designed to foster enjoyment in physical activity by providing learners with an opportunity to take part in a range of physical activities. By following the course, learners will be able to develop an understanding of effective and safe physical performance and to appreciate the need for a sound understanding of the principles, practices and training that underpin improved performance, as well as better health and well-being.

COURSE OUTLINE

Unit 1 : Anatomy and Physiology

- **Skeletal and muscular system**

The skeleton and its functions, joint types, structure and formation, movements at joints, muscles, antagonistic muscle action, muscle fibre types.

- **Respiratory System**

The pathway of air and gaseous exchange, the mechanics of breathing, breathing volumes and minute ventilation.

- **Circulatory System**

Components of blood, heart structure and function, cardiac output.

- **Energy supply and the effects of exercise on the body**

Aerobic and anaerobic respiration, recovery, short-term effects of exercise, long-term effects of exercise.

- **Simple biomechanics**

Principles of force, applications of force, levers.

Unit 2 : Health, fitness and training

- **Health and well-being**

Health and well-being, fitness, diet and energy sources, components of fitness, fitness testing, VO2 max (maximum oxygen uptake).

- **Training**

Principles of training and overload, methods of training, warming up and cooling down.

Unit 3 : Skill acquisition and psychology

- **Skills and skill acquisition**

Skill and ability, skilled performance, skill classification, simple information-processing model, the stages of learning, feedback, guidance.

- **Psychology**

Goal setting, motivation and mental preparation, arousal, anxiety, relaxation techniques, personality types.

Unit 4 : Social, cultural and ethical influences

- **Social and cultural influences**

Leisure, recreation and the growth of leisure activities, the sports development pyramid, access and participation in sport, sponsorship, media, global events, professional and amateur performers, technology in sport.

- **Ethics and other issues**

Performance enhancing drugs (PEDs), blood doping, risk and risk assessment, injuries.

ASSESSMENT

The assessment consists of two components:

Component	Description	Time	Weighting
Paper 1	Theory	1 hour 45 minutes	50%
Component 2	Coursework • Undertake four physical activities from at least two of the seven categories	Internally Assessed / Externally Moderated	50%

Categories	Physical activities	
Games activities	Association football Badminton Baseball, Rounders **or** Softball Basketball Cricket Golf Handball Hockey	Lacrosse Netball Rugby league **or** Rugby union Squash Table tennis Tennis Volleyball
Gymnastic activities	Artistic gymnastics (floor and vault) **or** Rhythmic gymnastics	Individual figure skating Trampolining
Dance activities	Dance	
Athletic activities	Cross-country running Cycling Rowing and sculling	Track and field athletics Weight training for fitness
Outdoor and adventurous activities	Canoeing Hill walking **or** Orienteering Horse riding Mountain biking	Rock climbing Sailing Skiing **or** Snowboarding Windsurfing
Swimming	Competitive swimming Life saving **or** Personal survival	Water polo
Combat activities	Judo **or** Taekwondo	

OPTIONAL SUBJECT : SCIENCE (TRIPLE AWARD)

*Edexcel IGCSE **4SD0***

AIMS

To provide a worthwhile educational experience, through well designed studies of experimental and practical science, whether or not they go on to study science beyond this level. In particular, learners' studies should enable them to acquire understanding and knowledge of the concepts, principles and applications of biology, chemistry and physics and, where appropriate, other related sciences so that they may:

- Become confident citizens in a technological world, able to take or develop an informed interest in matters of scientific importance
- Recognise the usefulness, and limitations, of scientific method and appreciate its applicability in other disciplines and in everyday life
- Be suitably prepared for studies beyond Edexcel IGCSE in pure science, in applied sciences or in science-dependent vocational cases

To develop abilities and skills that:

- Are relevant to the study and practice of science
- Are useful in everyday life
- Encourage safe practice
- Encourage effective communication

To stimulate:

- Curiosity, interest and enjoyment in science and its methods of enquiry
- Interest in, and care for, the environment

To promote an awareness that:

- The study and practice of science are co-operative and cumulative activities subject to social, economic, technological, ethical and cultural influences and limitations
- The applications of science may be both beneficial and detrimental to the individual, the community and the environment
- The concepts of science are of a developing and sometimes transient nature
- Science transcends national boundaries and that the language of science is universal

COURSE OUTLINE

Edexcel IGCSE Triple Award Science is designed as a two year course of study and is suitable for learners who have an interest in Science and a desire to pursue a deeper understanding of science topics. The course covers all aspects of each of the Edexcel IGCSE separate sciences and leads to the award of three IGCSE awards in each of the separate sciences. Learners are taught by three teachers: a Biology, Chemistry and Physics specialist. The following topics are covered:

Biology

1: Organisms and Life Processes
- Life Processes
- Variety of Living Organisms

2: Animal Physiology
- Breathing and Gas Exchange
- Food and Digestion
- Blood and Circulation
- Coordination
- Chemical Coordination
- Respiration
- Homeostasis and Excretion
- Reproduction in Humans

3: Plant Physiology
- Plants and Food
- Transport in Plants
- Chemical Coordination in Plants
- Reproduction in Plants

4: Ecology and the Environment
- Ecosystems
- Human influences on the environment

5: Variation and Selection
- Chromosomes, Genes, and DNA
- Cell Division
- Genes and Inheritance
- Natural Selection and Evolution
- Selective Breeding

6: Microorganisms and Genetic Modification
- Using Microorganisms
- Genetic Modification

Chemistry

1: Principles of chemistry
- States of matter
- Elements, compounds and mixtures
- Atomic structure
- The Periodic Table
- Ionic bonding
- Covalent bonding
- Chemical formulae, equations and calculations part 1
- Chemical formulae, equations and calculations, part 2
- Metallic Bonding
- Electrolysis

2: Inorganic chemistry
- Group 1 (alkali metals)
- Group 7 (halogens)
- Gases in the atmosphere
- Reactivity series

3: Physical chemistry
- Energetics
- Rates of reaction
- Reversible reactions and equilibria

4: Organic chemistry
- Crude oil
- Alkanes
- Alkenes
- Alcohols

- Extraction and uses of metals
- Acids, alkalis and titrations
- Acids, bases and salt preparations
- Chemical tests
- Carboxylic acids
- Esters
- Synthetic polymers

Physics

1: Forces and motion
- Movement and position
- Forces and shape
- Forces and movement
- Momentum
- The Turning Effect of Forces

2: Electricity
- Mains electricity
- Current and Voltage in Circuits
- Electrical Resistance
- Electric Charge

3: Waves
- Properties of waves
- The electromagnetic spectrum
- Light Waves
- Sound

4: Energy resources and energy transfers
- Energy transfers
- Thermal Energy
- Work and power
- Energy Resources and Electricity Generation

5: Solids, liquids and Gases
- Density and pressure
- Solids, Liquids and Gases

6. Magnetism and Electromagnetism
- Magnetism and Electromagnetism
- Electric Motors and Electromagnetic induction

7: Radioactivity and Particles
- Atoms and Radioactivity
- Radiation and Half life
- Applications of Radioactivity
- Fission and fusion

8: Astrophysics
- Motion in the Universe
- Stellar evolution
- Cosmology

ASSESSMENT

Learners have three examinations in May/June of Year 11.

Component	Description	Time	Weighting
Biology	Paper 1 Multiple-choice questions and short-answer questions on Biology	2 hours	61.1%
	Paper 2 Multiple-choice questions and short-answer questions on Biology	1 hour 15 mins	38.9%
Chemistry	Paper 1 Multiple-choice questions and short-answer questions on Chemistry	2 hours	61.1%
	Paper 2 Multiple-choice questions and short-answer questions on Chemistry	1 hour 15 mins	38.9%
Physics	Paper 1 Multiple-choice questions and short-answer questions on Physics	2 hours	61.1%
	Paper 2 Multiple-choice questions and short-answer questions on Physics	1 hour 15 mins	38.9%

OPTIONAL SUBJECT : FURTHER PURE MATHEMATICS

Edexcel IGCSE 4PM1

AIMS

The Further Pure Mathematics course is available as an option to learners with both a passion for mathematics and a strong record of success. Admission to this course is by approval. Learners choosing this option will take the Mathematics A (Higher) examination at the end of Year 10 and the Further Pure Mathematics examination at the end of Year 11. The Higher course will be completed in Year 10, and the Further Pure course will follow that in Year 11.

This syllabus should enable learners to:

- Consolidate and extend their elementary mathematical skills, and use these in the context of more-advanced techniques;
- Further develop their knowledge of mathematical concepts and principles, and use this knowledge for problem solving;
- Appreciate the interconnectedness of mathematical knowledge;
- Acquire a suitable foundation in mathematics for further study in the subject or in related subjects;
- Devise and use mathematical arguments which are present precisely and logically;
- Integrate information technology (IT) to enhance the mathematical experience;
- Develop confidence to apply their mathematical skills and knowledge in appropriate situations;
- Develop creativity and perseverance in the approach to solving problems;
- Derive enjoyment and satisfaction from engaging in mathematical pursuits, and gain an appreciation of the beauty, power and usefulness of mathematics.

COURSE OUTLINE

The following topics are covered:

- Logarithmic functions and surds
- The quadratic function
- Identities and inequalities
- Polynomial, reciprocal functions and graphs
- Sequences and series
- The binomial series
- Scalar and vector quantities
- Rectangular Cartesian Coordinates
- Further calculus
- Further trigonometry

ASSESSMENT

Learners sit two written papers. The assessment outline is shown in the following table:

Component	Description	Time	Weighting
Paper 1	Calculator; approximately 11 questions, 100 marks	120 minutes	50%
Paper 2	Calculator; approximately 11 questions, 100 marks	120 minutes	50%

All papers are externally marked.

OPTIONAL SUBJECT : DESIGN & TECHNOLOGY

Cambridge IGCSE 0445

AIMS

The overarching aims of the Design & Technology syllabus are to:

- develop creative thinking in areas relevant to design and technology;
- apply problem-solving skills to practical and technological problems;
- develop the communication skills central to design, realisation and evaluation;
- gain knowledge and understanding of design and technology;
- develop skills in research and investigation;
- design and make products, taking into consideration sustainability and the wider impact on society;
- develop the ability to make aesthetic, economic, ethical and technical value judgements.

COURSE OUTLINE

1. **Product Design: Common Content**

All learners study the Design & Technology Common Content. This provides foundation knowledge and skills for design & technology which are important to all areas of the subject. Some of the general Product Design areas addressed in the Common Content are:

- Observe need/requirement
- Design brief/specification
- Identification/research
- Design & technology in society
- Generation of possible ideas
- Communication of design ideas
- Implementation and realisation
- Use of technology in design and making
- Practical design application
- Environment & sustainability

2. **Product Design: Project**

The Component 2 Project forms a significant part of the teaching and assessment requirements of the Design & Technology syllabus. Learners usually work on their project over the final two terms of the course. Each learner completes an individual project in the form of a folder of work and a made product. Learners will make full use of the wide range of ICT available in the school for design work, including laser cutting and 3D printing. Freehand sketches and hand drawn technical drawings and computer-aided design (CAD) generated drawings are also part of the project syllabus. Since learners will be taking the Graphic Products Specialist Option (described below), their made product could be in 2D or 3D form.

3. **Specialist Option: Graphic Products**

The Graphic Products specialist component will be taught in a practical way, integrated with the Product Design Common Content. This component aims to develop the skills that designers use within the context of their design activities in the design studio. It also aims to develop an awareness of the importance of communication and modelling techniques concerned with promotion and illustration of ideas and their interrelationship with all stages in commercial manufacture and

promotion. The role graphic products have in the following areas will be explored throughout the course:

- packaging
- promotional design
- display
- product design
- manuals
- transport
- architectural modelling
- corporate identity
- interior design
- fashion design

This course provides an excellent foundation for the study of Design at IB DP level (as part of the Group 4 subject set alongside the other Science disciplines).

Component	Description	Time	Weighting
Component 1	Written/Drawing Examination - Common Content • Questions will be based on the Product Design Common Content	1 hours 15 minutes	25%
Component 2	Project • One individual piece (3-5 minutes): performance of an extract from a play • Two group pieces (max 15 minutes each): one performance of an extract from a play, one original devised piece	Internally Assessed & Externally Moderated	50%
Component 5	Written/Drawing Examination - Graphic Products • Questions will be based on the Specialist Option: Graphic Products content and the Common Content: Product Design	1 hour	25%

FOUNDATION ENGLISH (SUPPORT)

Foundation English provides English language support to identified Bilingual and Multilingual learners (BMLs) in Years 10 & 11. The English support classes assist BMLs in mainstream classes to increase their English language proficiency while still participating in their normal class routine.

AIMS

- Develop BMLs English language proficiency in specialised classes so they succeed in the mainstream subject areas
- Collaborative BMLs learning activities with other BMLs and the BML Specialist teacher
- Develop academic study skills necessary for mainstream classes and assignment work

Support is given in and out of the mainstream classroom.

- Develop strategies to successfully deal with a range of academic texts.
- Practise and develop the use of subject specific vocabulary needed for mainstream subjects.

OUTLINE

Foundation English covers the following areas:

- Review of essential classroom and academic language on an ongoing basis
- Academic research strategies and foster collaborative learning with peers
- Review, discussion and support for subject areas studied by each individual learner on a personal level
- Information literacy components and ICT integration to assist BMLs.
- Develop Reading and Writing skills for each learner required for each subject area
- Follow subject area units of study to assist BMLs
- Support learners to prepare for IGSCE examinations and assignments

ASSESSMENT

Assessment of learners in Foundation English consists of:

- Itemised assessments based on specific units of study (formative)
- End of term assessments based on learning throughout the semester (summative)
- Prolonged assessment of performance, attitude to develop language proficiency, class participation and motivation across the four main areas of; Listening, Reading, Writing and Speaking
- Some learners will take the IELTS Academic exam at the end of Year 11.