

Electives Offered to Biology and Mathematics Stream (2008-2009)

(The medium of instruction is English.)

<u>Subject</u>	<u>Level</u>	<u>No. of places</u>	<u>Remark</u>
Applied Maths.	*AL/ASL	30	for Maths. stream only
Chemistry	AL	60	for Maths. stream only
#Computer Applications	ASL	30	for Maths. & Bio. streams
#Computer Studies	AL	30	for all streams
Math. & Statistics	ASL	30	for Biology stream only
Physics	AL	60	for Biology stream only

Successful applicants will be allocated to elective groups of their choice according to the selection criteria set by the school. Such results will be released on 25 August (Monday).

NOTE :

*** / # combined class**

For the **Mathematics Stream and Biology Stream**, those who get **19 points or below** from the best 6 subjects can take **only ONE ASL subject** as their elective.

Applied Mathematics (AL)

The overall objectives are :

- to develop students' mathematical skills in solving real-life problems,
- to develop students' confidence and interest in applying mathematics,
- to provide students with a foundation of mathematical knowledge required in scientific and technological studies at sixth form and beyond.

In the syllabus, there are 4 main topic areas:

1. Vectors and Mechanics
2. Differential Equations
3. Numerical Methods
4. Probability and Statistics

Applied Mathematics (ASL)

The subject has been designed for students intending to continue their studies in engineering, science and technology. Students studying this syllabus are expected to have acquired mathematical knowledge at the level of the Hong Kong Certificate of Education Examination. In addition, a knowledge of the topics of trigonometry, exponential and logarithmic functions, basic operations of complex numbers and elementary calculus will be expected.

There are 1 introductory area and 3 main topic areas in the syllabus:

0. Introduction : Fundamental Knowledge
1. Differential Equations
2. Numerical Methods
3. Probability and Statistics

Chemistry (AL)

In this syllabus, emphasis will be placed on the application of chemistry and its social, economic, environmental and technological implications. The topics can be roughly be divided into four areas, namely Physical Chemistry, Organic Chemistry, Inorganic Chemistry and Chemistry in Action.

Both in the quantity and the depth of treatment, the AL syllabus is much more than that of the CE syllabus. The studying skill required for AL Chemistry is quite different from that for the CE course. Physical Chemistry involves a certain amount of calculation which requires students to understand the underlying principles beforehand. Organic Chemistry requires students to understand a chemical reaction in molecular level as well as to memorize a number of reactions before they can go on to solve other problems. Inorganic Chemistry requires students to recall, predict and explain facts concerning the elements and their compounds in the Periodic Table. Chemistry in Action includes the study of natural and synthetic polymers, some common drugs and green chemistry.

Other than the theoretical part, much emphasis will be put on practical work. Students will be required to perform experiments individually and hand in the reports immediately after the practical session in most cases. Students' performance in practical work will constitute 20% of the total mark in their future HKAL examination.

Computer Applications (ASL)

The Curriculum is designed to provide students with :

- knowledge, understanding and skills in the development and use of computer systems over a range of applications;
- an understanding of the organization of computer systems;
- an appreciation of the impact on society arising from the rapid development of computer technologies; and
- an opportunity to develop skills in problem solving, communication, creativity and critical thinking, and learning to learn capabilities.

The curriculum consists of four modules: Computer Systems, Office and Internet Applications, Databases and SOHO Networking. The examination consists of two parts: a three-hour written paper and a school based project.

Computer Studies (AL)

The Curriculum is designed to provide students with :

- knowledge, understanding and skills in the development and use of computer systems in a range of applications;
- an understanding of the organisation of computer systems and their underlying mechanisms to perform computational tasks;
- an appreciation of the impact on society arising from the rapid development of computer technologies; and
- an opportunity to develop skills in problem solving, communication, creativity and critical thinking, and learning to learn capabilities.

The curriculum consists of six modules: Office and Internet Applications, Databases, SOHO Networking, Computer Organization, Systems Development and Programming. The former three modules are common modules to Advanced Supplementary Level Computer Applications. The examination consists of two parts. They are two three-hour written papers and a school based project.

Mathematics and Statistics (ASL)

The syllabus aims at breadth rather than depth with a view to broadening students' perspective on Mathematics.

Mathematics and statistics each constitutes about half of the syllabus in weight. The mathematical part emphasizes calculus because of its versatile usefulness for the study of statistical, social, biological or chemical phenomena. No further treatment of geometry and trigonometry is included as the CE Mathematics Syllabus has already covered these topics adequately for the students concerned. The algebra content of the CE Mathematics is also considered adequate except for permutations, combinations and binomial expansion that are particularly useful for studying probability and statistics. Exponential and logarithmic functions are included because of their wide applications.

The statistical part starts with basic statistical measures. Due emphasis is placed on probability because it is elementary and hence important. The normal, Bernoulli, binomial, geometric and Poisson distributions serve to widen students' knowledge of probability distributions. A study of population parameters and sample statistics depicts the relationship between populations and samples. A comparison of frequency distribution with fitted probability distributions provides a link between empirical data and theoretical models, statistics and probability, and sample and population.

As a whole, the syllabus has about 30% common with the CE Additional Mathematics Syllabus, mainly in calculus and binomial expansion. A substantial part of the syllabus is contained in the A Level Pure Mathematics and A Level Applied Mathematics Syllabuses. The overlapping with the ASL Applied Mathematics Syllabus is mainly in statistics and probability. However, the spirit in which the topic is treated in the two syllabuses is not quite the same.

Physics (AL)

Aims

This syllabus encourages both the experimental and the theoretical approach to physics and is designed to provide a balanced course for further study, and to give an appreciation of the nature and the importance of physics in daily life. It aims to stimulate candidates' interest in, and enthusiasm for the study of physics, and promote a sense of achievement.

The Syllabus

Section	Topics
A. Mechanics	statics, kinematics, dynamics, projectile motion, circular motion, gravitation, oscillation
B. Wave Motion	wave propagation, wave phenomena, stationary waves, acoustics, optical instruments
C. Fields, Electricity and Electromagnetism	electric fields, storage of charge by capacitors, current electricity, electromagnetism, electromagnetic induction, alternating currents
D. Matters	gases, solids, fluids, electrons, extra-nuclear structure of the atom, radioactivity, conservation of energy and mass

The Examination

The examination consists of two three-hour written papers and a Teacher Assessment Scheme (TAS). Paper 1 (42%) contains structured-type questions, all of which are to be attempted. Paper 2 consists of two sections, A and B. Section A (25%) contains multiple-choice questions and Section B (18%) contains essay-type questions, and candidates are required to answer 3 out of 4 questions in this section. Paper 3 (15%) is a Teacher Assessment Scheme, which is compulsory for all school candidates. Their practical abilities will be assessed internally by subject teachers.

- Notes:
- (i) A broad knowledge of the Hong Kong Certificate of Education Physics Syllabus is assumed and questions requiring such knowledge may be set.
 - (ii) Additional mathematical knowledge is required for the handling of physical concepts and models in Advanced Level Physics.

In addition to the general mathematics at secondary level, the following are required.

1. Indices: integral, negative and fractional. Logarithms to bases 10 and e .
2. Use of the approximation $(1 + x)^a \approx 1 + ax$ for small x .
3. The exponential function.
4. The \sin , \cos , \tan , \cot functions for positive and negative angles and for angles $> 2\pi$. The results $\sin \theta \rightarrow \theta$, $\tan \theta \rightarrow \theta$, and $\cos \theta \rightarrow 1$ as $\theta \rightarrow 0$. Ability to use the common trigonometric formulae in straightforward calculation. Meaning of $\sin^{-1} x$, etc.
5. The derivative as a limit. Interpretation as a gradient of the tangent to a curve and as a rate of change in general, either in time or space. The second derivative.
6. Differentiation of kx^n , $\sin kx$ and $\cos kx$, e^{kx} and $\ln kx$ where n and k are constants.
7. Calculation of maximum and minimum in simple cases involving the above functions.
8. Integration as the inverse of differentiation. The definite integral as the limit of a sum.

P.L.K. VICWOOD K.T. CHONG SIXTH FORM COLLEGE
Electives Offered to Arts and Business Stream (2008-2009)

(The medium of instruction is English except for Liberal Studies and Chinese History)

AL : Buss. Studies, Chinese History, Geography, Principles of Accts., Psychology,
Computer Studies

ASL: Chinese History, Computer Applications, History, Liberal Studies

NO. OF PLACES : 30 places per elective group (combined class for Chi. Hist. – AL/ASL, and Computer Studies & Computer Applications), except for Liberal Studies which offers a maximum of 18 places

Successful applicants will be allocated to elective groups of their choice according to the selection criteria set by the school. Such results will be released on 25 August (Monday).

Business Studies (AL)

The aims of this A-level course are to provide students with a knowledge of the theoretical and practical aspects of the various types of business organisations and an understanding of the Hong Kong business environments. Some major topics include : marketing, financial management, human resources management, risk management, etc. The examination papers consist of short questions, questions on case studies and essay questions.

This subject is open to Arts and Business students and backgrounds in Economics, Commerce and Principles of Accounts are **NOT** required! Good English language skills and mathematical abilities will be an advantage for studying this subject.

History (ASL)

Candidates may enter for EITHER Syllabus A OR Syllabus B. The two syllabuses are identical in terms of the skills to be developed and tested, the structure and duration of the examination, and question format.

Syllabus A is on Modern Western History (circa 1800-1980) whereas Syllabus B is on Modern Asian History (circa 1800-1980).
Our school offers Syllabus A.

Computer Applications (ASL)

The Curriculum is designed to provide students with :

- knowledge, understanding and skills in the development and use of computer systems over a range of applications;
- an understanding of the organization of computer systems;
- an appreciation of the impact on society arising from the rapid development of computer technologies; and
- an opportunity to develop skills in problem solving, communication, creativity and critical thinking, and learning to learn capabilities.

The curriculum consists of four modules: Computer Systems, Office and Internet Applications, Databases and SOHO Networking. The examination consists of two parts: a three-hour written paper and a school based project.

Computer Studies (AL)

The Curriculum is designed to provide students with :

- knowledge, understanding and skills in the development and use of computer systems in a range of applications;
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The curriculum consists of six modules: Office and Internet Applications, Databases, SOHO Networking, Computer Organization, Systems Development and Programming. The former three modules are common modules to Advanced Supplementary Level Computer Applications. The examination consists of two parts. They are two three-hour written papers and a school based project.

Geography (AL)

The AL geography syllabus is divided into 3 main sections. In each section, the interactions between human beings and natural environment is emphasized. Practical skills such as map reading and statistical techniques will be integrated into the syllabus. The 3 sections, and some of the sub-divisions, are described below.

- I. Natural Landscapes
 - A. Climatic system
 - B. Landform system
 - C. Biotic system
 - D. Man-environment relationship
- II. Agricultural Landscapes
- III. Urban & Industrial Landscapes

Principles of Accounts (AL)

Objectives

The course aims to develop students' abilities to :

- demonstrate knowledge of accounting procedures and practices and an understanding of accounting principles on which they are based,
- apply such knowledge and understanding to familiar and novel situations,
- analyse data and present information in an appropriate accounting form, and
- evaluate a given scenario with reasoned explanations and make recommendations based on accounting information and principles.

Examination Format :

Paper I (3 hours)	Section A (60%)	2 compulsory questions of 30 marks each
	Section B (40%)	a choice of 2 out of 3 questions of 20 marks each
Paper II (3 hours)	Section A (60%)	2 compulsory questions of 30 marks each
	Section B (40%)	a choice of 2 out of 3 questions of 20 marks each

Remark :

For Principles of Accounts, the AL examination syllabus is heavily built on the CE examination syllabus. Extra efforts from students with no previous accounting knowledge are therefore required. Students must be well prepared for this.

Psychology (AL)

The course aims to provide students with an opportunity to obtain a basic knowledge of psychological theory and research in which their practical implications are strongly emphasized. Students are expected to develop critical thinking to evaluate different theoretical frameworks and analyze everyday phenomena from a psychological point of view. Twelve important discussion topics are included in the course.

	Paper I	Paper II
Section 1	Nature of Psychology	Scientific Methods of Psychology
Section 2	Learning	Motivation and Emotion
Section 3	Remembering and Forgetting	Biological Processes and Consciousness
Section 4	Sensation, Perception and Attention	Individual Differences
Section 5	Child and Adolescent Development	Social Influences
Section 6	Personality	Stress and Psychopathology

中國歷史科

本科共分兩「程度」 - - 高級程度 (AL) 及高級補充程度 (ASL)

高級程度 (AL)

【考試形式】本科設二卷

(試卷一) 共分三部分 歷代治亂因果：包括必答題歷史資料題 (DBQ)
重要制度
學術思想

(試卷二) 共分四部分 經濟發展
中外交通
史學名著
宗教傳播

【考試時間】每卷各為三小時

【本科主要目標】 本科考試主要是測驗同學下列能力：

1. 剖析及論述重要史實。
2. 綜合有關之史實，加以比較及論證。

高級補充程度 (ASL)

【考試形式】本科只設一卷

(試卷) 共分三部分 歷代治亂因果：包括必答題歷史資料題 (DBQ)
重要制度
學術思想

【考試時間】每卷各為三小時

【本科主要目標】

本科考試主要是測驗同學下列能力：

- 1 . 剖析及論述重要史實。
- 2 . 綜合有關之史實，加以比較及論證。

通識教育科

簡介

本校通識教育科將為同學們開設三個單元，供同學修讀：

本校必修：

單元一 香港研究

本校選修（二選一）：

單元三 人際關係

單元六 今日中國

凡於本校修讀通識教育科的同學，必須選讀「香港研究」單元，並於「人際關係」、「今日中國」兩單元，選修其一。

修讀本科的同學須選考兩個單元，並就所選讀的其中一個單元，提交一項專題研究報告。每一單元的分數佔全科總分的40%，而專題研究報告則佔20%。

答卷考核

在答卷考核部分，每一單元的考試時間為兩小時三十分。每一單元的試卷將包括兩組題目：

甲組（佔75%）：常設三題，均屬資料回應題（DBQ），考生必須回答所有題目；

乙組（佔25%）：共設四題，考問形式可為文章式題目（Essay Question）或資料回應題，考生須選答一題。

專題研究報告考核

至於專題研究報告部分，每一位同學須就其所選考的其中一個單元，提交一份專題研究報告，而同學在專題研究報告部分所考獲的分數，將佔全科總分的20%。