



## Peirce Secondary School

### SECONDARY TWO STREAMING EXERCISE 2018

### INFORMATION BOOKLET for Secondary 3 Express Course (2019)

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## GENERAL INFORMATION

This booklet provides information on the various 'O' level subjects available for our Secondary Three cohort of 2019. It serves to help parents and students make informed choices pertaining to their subject options based on their academic inclinations and strengths.

1. Option is made after the results for the end-of-year examination is released.
2. Students will only be able to choose from a list of subject combinations they have qualified for.
3. Students will be briefed 3 times – once in Term 1, once in Term 2 and one more time in Term 4.
4. Mock Streaming in May
  - a. The school conducts a mock streaming after the SA1 to provide:
    - i. a reality check for students – it helps them recognize the gap between their wants and their performance;
    - ii. a dipstick for the school to gauge student interest and their choices so that we can plan and work on our resource management;
  - b. Sec 2 students will indicate their subject choices via the school LMS portal, e-Streaming module in May after Mid-year results are out.
  - c. Students will be allocated their subject combination based on merits of Sec 2 First Semester Combined results.
  - d. Results of the Streaming Exercise will be released during June Holidays through school e-Portal.
  - e. This streaming exercise **will not have any bearing** on the actual streaming in October.
5. Actual Streaming in October
  - a. Students will be allocated their subject combination based on merits of Sec 2 Overall results.

#### Instructions to complete the Online Streaming process

1. The students will each receive a personalised hardcopy option form.
2. The list of subject combinations which the students have qualified for will also be shown.
3. The students are to indicate the order of choice (1<sup>st</sup> to 5<sup>th</sup>) against the corresponding subject combinations they are opting for in the rightmost column.
4. Login to the school LMS portal via <http://www.peircesec.moe.edu.sg> and access the e-Streaming module (Tools tab >> Administrative Tools Section >> e-Streaming).
5. The students are to enter their choices into the e-Streaming module as per the options indicated in the hardcopy form and complete the process by clicking on the **“submit”**, **“confirm”** and **“print”** buttons in sequence.
6. Parents must sign on the print-out of the online option form.

### Submission of Option Forms and Streaming Results

1. Parents are advised to carefully consider their child's choices of subject combinations and complete the option form.
2. Submission of the print-out from the online streaming system must be made by the given deadline, failing which the school will reserve the right to allocate for the student, a subject combination that is appropriate for his/her ability and aptitude.
3. Results of the streaming will be released within 2 weeks of the exercise.
4. Parents will be able to receive their child's streaming results through the following channel:
  - Peirce LMS portal
5. Appeals
  - All appeals will be considered **only after** the streaming has been completed based on standing policies and the results released.
  - These appeals must then be **made using the official appeal forms** and must be submitted by the given deadline.
  - Conditions for appeal: Appeals will only be considered if it is not against any of the established school policies on streaming.
  - The appeals will be addressed on a case-by-case basis.
  - The results of the appeals will only be confirmed and made known to applicants at the end of December. Applicants may check the outcome of their appeals via the LMS or the noticeboard outside the school office.
  - The school's decision will be final and no further appeal can be made.

### School Policies on Streaming

1. The school reserves the right to decide on the final subject combination offered.
2. Each student in the Express Course would be offered 7 subjects.
3. Compulsory subjects for all students:
  - a. English Language,
  - b. Mathematics,
  - c. Mother Tongue language,
  - d. Combined Humanities (Social Studies + Geography or History),
  - e. At least 1 Science subject.

Subject Offered in Sec 3E	Subject Pre-Requisite and Additional Criterion
<b>MATHEMATICS</b>	
Additional Mathematics	Students laterally transferred from 2NA: At least a score of 85 in Sec 2NA Mathematics Students in 2E: At least a C5 in Mathematics.
<b>SCIENCES</b>	
Double Science	At least a B3 in Science.
<b>HUMANITIES</b>	
Literature	At least a <b>A2</b> in Literature <b>AND B3</b> in English Language.
Geography	At least a <b>A2</b> in Geography & must NOT be offered with Combined Humanities (Geography).
History	At least a <b>A2</b> in History & must NOT be offered with Combined Humanities (History).
Combined Humanities (Geography)	Must NOT be offered with Geography.
Combined Humanities (History)	Must NOT be offered with History.
<b>COURSEWORK</b>	
Design & Technology	Maximum Class Size: 20.
Art	Maximum Class Size: 20.
Food & Nutrition	Maximum Class Size: 20.
<b>OTHERS</b>	
Computing	At least a C5 in Mathematics.
Principles of Accounts	

4. The students will be streamed based on the following:
  - a. Merit of their **Sec 2 Overall results**
  - b. In the event that demand is greater than number of vacancies, priority is given in the following order:
    - i. **Order of Choice (First choice will be looked into first)**
    - ii. **Order of Merit (Subject Specific)**
    - iii. **Order of Merit (Overall Average for all subjects)**
5. Streaming Committee will try to allocate the students their requests as much as possible (but this is subject to our resource availability)
6. Students who are not given any of their choice or do not meet the minimum requirement for any combinations will be allocated a subject based on the relative strength.

# OPTIONS

## SCIENCES

### Brief Description

All students are required to study at least one Science subject. There are 3 basic branches of Science:

1. Physics – Physics is concerned with the underlying principles of the natural world, and deals with the elementary constituents of the universe, that is, all classes of matter and energy, their interactions, as well as the analysis of systems which are best understood in terms of their fundamental principles.
2. Chemistry – Chemistry deals with the composition and statistical properties of matter and structures, as well as their transformations and interactions to become materials encountered in everyday life. The physical properties of materials are generally determined by their structure at the atomic scale which in turn is dictated by the properties and energies of the interactions.
3. Biology – Biology, essentially the study of Life, is concerned with the characteristics, classification, and behaviours of organisms, how species come into existence, and the interactions they have with each other and with the environment. All concepts in biology are subject to the same laws that other branches of science obey, such as the laws of thermodynamics and conservation of mass.

Students may opt to do:

- 2 pure Science subjects from pure Chemistry and pure Physics/pure Biology, **or**
- 1 Combined Science subject from Science (Physics/Chemistry) or Science (Chemistry/Biology)

Students who intend to pursue pure Science subjects should note that the level of rigor is high and students must have a strong level of perseverance and good attitude to manage the subject. Students opting for 2 pure Science subjects must obtain **B3 in Science** at the Secondary 2 Express level.

As a guide, the content of the component subjects of Combined Science is about 60% of each individual pure science subject and it is important to be able to cope with both components equally well in order to do well. For example, students pursuing Science (Physics/Chemistry) must do equally well in the Physics and Chemistry components in order to obtain a good grade for the subject.

P	C	B
Physics	Chemistry	Biology
<b>Examination Requirements</b> 'O' Level Examination for Pure Science subjects comprises: <ul style="list-style-type: none"> <li>• Paper 1 : Multiple-choice Questions</li> <li>• Paper 2 : Structured &amp; Free Response Questions</li> <li>• Paper 3 : Science Practical Assessment</li> </ul>		
S(pc)	S(cb)	
Science (Physics/Chemistry)	Science (Chemistry/Biology)	
<b>Examination Requirements</b> 'O' Level Examination for Combined Science comprises: <ul style="list-style-type: none"> <li>• Paper 1 : Multiple-choice Questions</li> <li>• Paper 2 : (Physics) } Structured &amp; Free-Response Questions.</li> <li>• Paper 3 : (Chemistry) } Candidates take <b>either</b> Paper 2 and 3</li> <li>• Paper 4 : (Biology) } <b>or</b> Paper 3 and 4</li> <li>• Paper 5 : Science Practical Examination</li> </ul>		

### Post-Secondary Options

Science subjects at the secondary level prepare students for the next phase of education, i.e. for JC and polytechnic education. Students who have studied Physics, either as a Combined Science option or as a pure subject, will have a broad choice of options at the tertiary level, as many JC subject combinations and polytechnic diploma courses require Physics as a prerequisite subject. This is especially true of Engineering courses.

With the increasing influence of Life Sciences, students who have studied Biology will have an advantage when they pursue Life Science courses in the polytechnics, or pursue Life Science subject combinations in JC. However, Chemistry, and not Biology, is the compulsory subject for university studies in Life Sciences or medicine-related degree programmes. Thus, for those who are thinking of a career in Life Sciences, it is important to have studied Chemistry, either as a pure subject or a Combined Science option, during the secondary school education.

## MATHEMATICS

M	Additional Mathematics
<b>Brief Description</b> Additional Mathematics, consists of 3 sections:	
a. <u>Algebra</u> – This is an important branch in mathematics that has strong links with all other branches in mathematics. It will provide students with the language and tools to represent abstract ideas, relationships and patterns using concise symbols	
b. <u>Geometry and Trigonometry</u> – Geometry deals with points, lines (curves) and angles, their relationships and links. The learning of geometry helps students develop the spatial visualisation skills, which complement and support the mathematical skills from other branches of mathematics. Trigonometry supports the learning of geometry and is important in the studies of periodic behaviour, phenomena and models that they may encounter in higher learning.	
c. <u>Calculus</u> – Calculus is an important branch of mathematics and deals with the concept of change. It is used in many fields of study including the physical sciences, computer science, economics, business, engineering and medicine. It involves abstract concepts and processes involving infinitesimal quantities and changes and limiting operations. As such, this section demands a strong foundation in Algebra and Geometry from the student.	
<b>Prerequisites</b> Students who have obtained <b>C5 in Mathematics</b> at Secondary 2 Express level can consider opting for Additional Mathematics. In addition, a hardworking attitude and lots of perseverance is needed because Additional Mathematics requires regular work and much practice to master. The student has to be strong in Algebra and Geometry to cope with the subject.	

### Post-Secondary Options

The syllabus will prepare you adequately for 'A' Level H2 Mathematics and H3 Mathematics, where a strong foundation in algebraic manipulation and mathematical reasoning skills are used.

In addition, many courses<sup>1</sup> in the polytechnics also require students with a strong foundation in Mathematics. While anecdotal evidence has shown that students with Additional Mathematics background are able to cope with the courses better, most of the diploma courses do not require Additional Mathematics as a prerequisite.

## COMBINED HUMANITIES

(A compulsory subject in the GCE examinations)

All students have to choose **one** of the following elective components in combination with **Social Studies**.

The two elective components available are:

<b>g</b>   <b>Geography Elective</b> (Not to be offered with Pure Geography)	<b>h</b>   <b>History Elective</b> (Not to be offered with Pure History)
<p>The Geography Elective syllabus is offered as an elective component together with the compulsory component of Social studies to form the Combined Humanities subject.</p> <p><b>Brief Description</b> The Geography Elective involves the study of both Physical and Human Geography. Students will learn about the world's human and physical features and the relationships between people, places and the earth. It shows how the world is connected and how the occurrence of one event in one place affects a person's life in another place. It is a study of the surface of the earth, its diverse landscapes, its features and natural phenomena and human activities.</p> <p>Students will learn:</p> <ul style="list-style-type: none"><li>• the features and formation of landforms in the physical landscape</li><li>• the relationships between people and their environment</li><li>• the development and management of the physical and human environments</li><li>• case studies of different physical-human relationships</li><li>• problem solving skills</li><li>• map reading skills in context of studies made of the physical and human environment</li></ul> <p><b>For students who...</b> have a keen interest in seeking an understanding of the surroundings and happenings and the inter-relationships between people and the environment.</p> <p><b>Post-Secondary Options</b> You can continue to pursue the subject at a greater depth at the 'A' Level. Students seeking admission to Junior Colleges (JCs) will need to include the Combined Humanities grade for their L1R5 aggregate computation. To pursue a polytechnic diploma, the Combined Humanities subject counts as one of the relevant subjects in computing the ELR2B2 aggregate for Business-Related courses in Polytechnics.</p>	<p>The History Elective syllabus is offered as an elective component together with the compulsory component of Social Studies to form the Combined Humanities subject.</p> <p><b>Brief Description</b> The History syllabus provides students with an understanding of the complexities of international relations. It highlights the importance of understanding and interpreting of history in all its complexity – its people, events, issues, periods, turning points, themes and sources. The syllabus also equips students with the necessary skills to make reasoned and informed decisions.</p> <p>Some of the History Elective topics include:</p> <ul style="list-style-type: none"><li>• World War I and the immediate aftermath</li><li>• Peace Making and Rise of authoritarian regimes</li><li>• War in Europe and War in Asia Pacific</li><li>• The outbreak and escalation of the Cold War and the End of Cold War</li></ul> <p><b>For students who ...</b></p> <ul style="list-style-type: none"><li>• have an interest in current affairs</li><li>• are interested in how human actions and political events shape our world</li><li>• are able to carry out independent research learning</li></ul> <p><b>Post-Secondary Options</b> Students can continue to pursue the subject at a greater depth at the 'A' Level. Students seeking admission to Junior Colleges (JCs) will need to include the Combined Humanities grade for their L1R5 aggregate computation. To pursue a polytechnic diploma, the Combined Humanities subject counts as one of the relevant subjects in computing the ELR2B2 aggregate for Business-Related courses in Polytechnics.</p>

## PURE HUMANITIES

(To be offered as a second optional humanity)

<b>G</b>   <b>Geography</b>
<p>Geography will not be offered together with the Combined Humanities Geography Elective. It is offered as a second optional Humanities subject in addition to the compulsory Combined Humanities subject.</p> <p><b>Brief Description</b> Geography involves the study of both Physical and Human Geography at a greater depth compared to the Geography Elective subject. Students will learn about the world's human and physical features and the relationships between people, places and the earth. It shows how the world is connected and how the occurrence of one event in one place affects a person's life in another place. It is a study of the surface of the earth, its diverse landscapes, its features and natural phenomena and human activities.</p> <p>Students will learn:</p> <ul style="list-style-type: none"><li>• the features and formation of landforms in the physical landscape</li><li>• the relationships between people and their environment</li><li>• the development and management of the physical and human environments</li><li>• case studies of different physical-human relationships</li><li>• problem solving skills</li><li>• map reading skills in context of studies made of the physical and human environment</li></ul>

<sup>1</sup> Most of the polytechnic courses, especially courses from the Engineering, IT, Applied Sciences, Digital Media and Design schools in the polytechnics, require students to have a strong foundation in Mathematics. The exceptions are courses from Business, Mass Communications and other related courses.

**For students who...**

- have obtained **A2 in Geography** at the Secondary 2 Express level.
- have a keen interest in seeking an understanding of the surroundings and happenings and the inter-relationships between people and the environment.

**Post-Secondary Options**

You can continue to pursue Geography at a greater depth at the 'A' Level. Secondary school Geography provides headstart knowledge in the study of Geography at H2 or H3 level at Junior Colleges (JCs). Students seeking admission to JCs or Millennia Institute (MI) can include the Geography grade for their L1R5 or L1R4 aggregate computation respectively. Geography counts as one of the relevant subjects in computing the ELR2B2 aggregate for the Business-Related courses in Polytechnics.

**H | History**

History will not be offered together with the Combined Humanities History Elective. It is offered as a second optional Humanities subject in addition to the compulsory Combined Humanities subject.

**Brief Description**

The History syllabus provides students with a regional and global perspective of the complexities of regional and international relations. It highlights the importance of understanding and interpreting history in all its complexity – its people, events, issues, periods, turning points, themes and sources. The syllabus also equips students with the necessary skills to make reasoned and informed decisions.

The two components of the subject are:

1. History of Southeast Asia, c.1870-1967

The focus is on the themes of colonialism, nationalism and independence in Southeast Asia between c.1870-1967. The paper emphasizes a cross-comparative study of three Southeast Asian countries, representing the imprint of British, Dutch and French colonial rule in Southeast Asia, during the different stages of their experience in the period under study. Candidates are expected to select at least two of the following countries as examples to support their answers to the structured-essay questions: Indonesia, Malaya and Vietnam.

2. 20th Century World History, 1910s-1991

This is a study of the historical forces such as war, ideology and nationalism that shaped the twentieth century. An issues-based approach is adopted for this study, in which issues from World War I to Cold War are analyzed in great depth.

**For pupils who ...**

- have obtained a **minimum Overall Grade of A2 in History** at Sec 2
- have an interest in current affairs
- are interested in how human actions and political events shape our world
- are able to carry out independent research learning

**Post-Secondary Options**

You can continue to pursue the subject at a greater depth at the 'A' Level. Secondary school History provides headstart knowledge in the study of History at H2 or H3 level at Junior Colleges (JCs). Pupils seeking admission to JCs or Millennia Institute (MI) can include the History grade for their L1R5 or L1R4 aggregate computation respectively. History counts as one of the relevant subjects in computing the ELR2B2 aggregate for the Business-Related courses in Polytechnics.

**L | Literature in English****Brief Description**

Literature in English is offered as a second optional Humanities subject for Express Course students in addition to the compulsory Combined Humanities subject.

The study of Literature offers a window to the exploration of areas of human concern and hence contributes to one's understanding of self and others. The Literature syllabus aims to develop students' ability to:

- Discover the joys of reading Literature and to become aware of new ways of perceiving the world around them;
- Explore the elements of different genres via the study of literary texts and to understand how these function in enabling literary works to achieve their desired ends;
- Select and interpret relevant material judiciously and to express ideas in coherent and clear English;
- Understand the importance of the contexts in which literary texts are written and understood; and
- Engage personally with texts, showing a strong intellectual and emotional awareness of themes, characters, settings and contexts.

Attendance at and participation in all supplementary and enrichment activities related to this subject (e.g. watching plays) are **compulsory**. These sessions are usually held in the afternoons, weekends and school holidays.

**For students who...**

- have an interest and passion for Literature
- have obtained **A2 for Literature AND B3 for English Language** at the Secondary 2 Express level.

**Post-Secondary Options**

**Literature in English** is a **Humanities** subject and the grade can be used in the computation of the aggregate score for entry into Junior Colleges (JCs) and polytechnics.

Most JCs offer Literature as one of its subjects. **Literature in English** provides students with a head-start in taking Literature at the GCE 'A' Level.

# COURSEWORK

A	Art
<p><b>Brief Description</b> The study of the Art subject provides a foundation in understanding and evaluating aesthetic intention and artistic skills so as to develop Visual Literacy.</p> <p>The subject content is structured under the domains of Perceiving, Communication and Appreciation. This framework provides the focus for the teaching and learning of Art.</p> <p>At the lower secondary level, Visual Art develops students' ability in exploring creativity and their personal identities. Students explore different media of art and its unique qualities.</p> <p>At the upper secondary, students acquire a deeper appreciation of art through:</p> <ol style="list-style-type: none"><li>Studio Practice</li><li>Study of Visual Arts (SOVA)</li></ol> <p>In Studio Practice, students will experiment with techniques in drawing and painting. In SOVA, students develop visual literacy and critical thinking skills such as analysis, interpretations and evaluation to provide them with the skills to inquire about Art.</p> <p>Students learn about art concepts and styles through the study of artists and artworks. They learn to interpret images through 3 broad themes: Art as narrative and inspiration, Art as Expression and Identity, Art as Communication and Design.</p> <p>The art programme strives to provide students with authentic experiential learning through programme tie-ups with external art learning institutions and art competitions.</p> <p><b>For students who ...</b></p> <ul style="list-style-type: none"><li>have a keen interest in Design, Fine Art, Computer and Print Media</li><li>are self motivated and hardworking</li><li>are thrilled to experiment different art media and techniques</li></ul> <p><b>Examination Requirements</b></p> <p><u>'O' Level Examination</u> Coursework (60%): 8 presentation boards &amp; 1 final art piece. Drawing &amp; Painting (40%): 3 hour paper. 5 A3 size preparatory work to be brought into the examination venue.</p> <p><b>Post-Secondary Options</b> Students can choose to do Art as one of their 'A' Level subjects in some of the Junior Colleges. The subject also counts as one of the relevant subjects for polytechnic courses such as Architecture, Landscape Architecture and Interior Design. Students could also choose to further develop their passion in arts with Nanyang Academy of Fine Arts (NAFA) or with LASALLE-SIA College of the Arts.</p>	

D	Design and Technology
<p><b>Brief Description</b> Design and Technology (D&amp;T) at the upper secondary level emphasises on design involving research, reasoned application of knowledge and skills in areas of design and technology. Students will then combine the knowledge and skills acquired towards the realisation of their Design Project.</p> <p>The subject requires students to apply appropriate knowledge in materials, processes and technological areas towards creating a design solution. It also provides students with opportunities to relate and apply their understanding from other curriculum areas like Science, Mathematics and Art.</p> <p>Skills like creativity, innovation, communication, critical thinking, collaboration and problem solving will also be taught through purposeful design tasks in the curriculum. These skills are applicable in other subject studies.</p> <p>In a typical D&amp;T coursework, students are guided to produce a Design Journal. This is a documentation of the processes while working towards the design solution from conceptualisation, development and realisation. Students will also need to demonstrate their competency in graphical communication, sensitive use of materials and appropriate constructional methods through submission of Presentation Boards and an Artefact for their final design proposal.</p> <p><b>For students who ...</b></p> <ul style="list-style-type: none"><li>like to doodle, have strong inclination to designing and problem solving. As such, students doing this subject must have good self-discipline and perseverance to work through the essential processes of researching, discovering, creating and evaluating.</li></ul> <p><b>Examination Requirements</b></p> <p><u>'O' Level Examination</u> Coursework (70%): 1 artifact, 3 presentation boards &amp; 1 design folio. Theory (30%): A 2 hour paper consisting of 2 sections.</p> <p><b>Post-Secondary Options</b> The D&amp;T subject provides a headstart knowledge for students opting for Engineering or Design-related Courses. It is accepted as one of the relevant subjects for application to Science-Based courses, Technology courses and Design courses in the local Polytechnics.</p>	

F	Food and Nutrition
<p><b>Brief Description</b> At lower secondary, students study Food and Consumer Education, in which they learn basic facts about food, nutrients and food science. At upper secondary, they learn in greater depth about food science and nutrition.</p> <p>In Food &amp; Nutrition (F&amp;N), students learn the basics of the food chemistry, human digestion and absorption of food. Acquiring these basics will enable them to study food and nutrition from a scientific point of view, equipping them with the understanding of what foods are essential to health and what happens to food during processing.</p> <p>The coursework component in the subject involves application of knowledge to analyse, research and develop on a given task. Students plan and execute the task, after which they need to review the processes involved. Students are also developed in their ability to plan, execute, record, interpret findings and draw logical conclusions from experimental work.</p> <p><b>For students who ...</b></p> <ul style="list-style-type: none"> <li>• have an interest in nutrition and health problems associated with diet</li> <li>• enjoy testing and experimenting with food</li> <li>• are able to carry out independent research learning</li> </ul> <p><b>Examination Requirements</b></p> <p><u>'O' Level Examination</u> Coursework (60%): An assignment given at the beginning of the examination year to be completed by July of the same year. This will include conducting an experiment and doing a practical examination.</p> <p>Theory (40%): A 2 hour written paper consisting of three sections.</p> <p><b>Post-Secondary Options</b> Students seeking admission to Junior Colleges (JCs) or Millennia Institute (MI) can include the Food &amp; Nutrition grade for their L1R5 or L1R4 aggregate computation respectively. To pursue a polytechnic diploma, Food &amp; Nutrition counts as one of the relevant subjects in computing the ELR2B2 aggregate in courses such as Sports and Exercise Sciences, Applied Food Science and Health Sciences.</p>	

## Computing

U	Computing						
<p><b>Brief Description</b> The syllabus aims to provide students with the foundation to continue with further studies in computing and skills to participate in a rapidly changing technological environment so that the concepts and skills learnt would also be applicable in other fields that require computing.</p> <p>The two-year course at upper secondary level is to enable students to:</p> <ol style="list-style-type: none"> <li>1. Apply logical reasoning and algorithmic thinking in analysing problem situations and developing solutions;</li> <li>2. Develop simple programs through the use of appropriate programming language(s);</li> <li>3. Understand how and where information communications technology (ICT) is used in daily life;</li> <li>4. Understand and explain the ethical, social and economic issues associated with the use of ICT.</li> </ol> <p>Students can handle and process data in computer systems, as well as the need to be ethical when dealing with data. They will demonstrate problem-solving techniques through analysing and writing programming solutions for a range of computing problems in business, education, mathematics and science. Students will be able to demonstrate computational thinking through the design and development of programming solutions.</p> <p>This syllabus comprises four modules and the units of study for each module are as listed with details below. The study is undertaken at the upper secondary levels for two years. Schools are encouraged to have in place, at lower secondary levels, a computer science programme that gives students a firm foundation to undertake the subject at upper secondary levels.</p> <p>The four modules are: Module I – Data and Information  <input type="checkbox"/> Data Management  <input type="checkbox"/> Data Representation  <input type="checkbox"/> Ethical, Social and Economic Issues            Module II – Systems and Communications  <input type="checkbox"/> Computer Architecture  <input type="checkbox"/> Data Communications            Module III – Abstraction and Algorithms  <input type="checkbox"/> Problem Analysis  <input type="checkbox"/> Algorithm Design            Module IV – Programming  <input type="checkbox"/> Program Development  <input type="checkbox"/> Program Testing</p> <p><b>Examination Requirements</b> <u>'O' Level Examination</u></p> <table border="1"> <tbody> <tr> <td>Paper 1 (80 marks) 70%</td> <td>A mixture of           <ul style="list-style-type: none"> <li>• Short-answer questions</li> <li>• Matching questions</li> <li>• Cloze passage</li> <li>• Structured questions</li> </ul> </td> <td>2 hours</td> </tr> <tr> <td>Paper 2 (50 marks) 30%</td> <td>4 compulsory structured questions on           <ul style="list-style-type: none"> <li>• Use of spreadsheet functions and features</li> <li>• Refinement of programme</li> <li>• Debugging of programme</li> <li>• Development of programme with no more than 40 lines of code</li> </ul> </td> <td>2 hours 30 minutes</td> </tr> </tbody> </table> <p><b>Post-Secondary Options</b> Students can choose to do Computing as one of their 'A' Level subjects in some of the Junior Colleges. Students seeking admission to Junior Colleges (JCs) or Millennia Institute (MI) can include the Computing grade for their L1R5 or L1R4 aggregate computation respectively. To pursue a polytechnic diploma, Computing counts as one of the relevant subjects in computing the ELR2B2 aggregate in several courses.</p>		Paper 1 (80 marks) 70%	A mixture of <ul style="list-style-type: none"> <li>• Short-answer questions</li> <li>• Matching questions</li> <li>• Cloze passage</li> <li>• Structured questions</li> </ul>	2 hours	Paper 2 (50 marks) 30%	4 compulsory structured questions on <ul style="list-style-type: none"> <li>• Use of spreadsheet functions and features</li> <li>• Refinement of programme</li> <li>• Debugging of programme</li> <li>• Development of programme with no more than 40 lines of code</li> </ul>	2 hours 30 minutes
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# Principles of Accounts

## T Principles of Accounts

### Brief Description

The subject aims to develop an understanding of the principles and concepts of accounting and their applications in a variety of business situations. Candidates will acquire basic knowledge in double entry and develop the ability to prepare, present, analyse and interpret financial statements.

The syllabus is organised into **six** sections:

- (i) role of accounting which is to provide information for monitoring and decision making by different users;
- (ii) double entry system of book-keeping which comprises the accounting equation, source documents, books of prime entry, the cash book, the general journal, the ledger and the trial balance;
- (iii) accounting procedures regarding capital and revenue expenditure, depreciation, adjustments to ledger accounts, the correction of errors and control accounts;
- (iv) fundamentals of preparing the final accounts i.e. Trading Account, Profit and Loss Account, Balance Sheet and the operation of partnerships;
- (v) preparation of final accounts for sole traders and partnerships, including the use of incomplete records; and
- (vi) analysis and interpretation of final accounts involving ratios.

### Examination Requirements

#### 'O' Level Examination

Paper 1	<b>3 to 4 compulsory structured questions (40 marks)</b>	1 hour
Paper 2	<b>4 structured questions (60 marks)</b> Section A (48 marks): 3 compulsory structured questions including 1 question on final accounts Section B (12 marks): Choose 1 out of 2 structured questions	2 hours

Paper 2 Section A will have one question on the preparation of final accounts, which carries 20 marks. Candidates will be provided with multi-column accounting stationery for answering questions in this Paper.

### Post-Secondary Options

Students seeking admission to Junior Colleges (JCs) or Millennia Institute (MI) can include the Principles of Accounts grade for their L1R5 or L1R4 aggregate computation respectively. To pursue a polytechnic diploma, Principles of Accounts counts as one of the relevant subjects in computing the ELR2B2 aggregate in several courses.



# POST-SECONDARY EDUCATION OPTIONS

## After 'O' Level

- Pre-University – Junior Colleges (2 years) and Millennia Institute (3 years)
- Polytechnics
- Institute of Technical Education

■ COMPARISON BETWEEN Junior College and Polytechnics	
Junior College	Polytechnics
2-year course	3-year course
Knowledge-based subjects	Market-driven and career-oriented courses
Preparation for university admission	Preparation for further education and the workforce
GCE 'A' Level qualification	Diploma in course majored
Structured & disciplined learning environment	Dynamic and progressive learning environment

For those who are considering between a JC education and a Polytechnic education, it is important to note that the JC curriculum is more academic and broad-based, similar to the secondary school system. On the other hand, students who pursue polytechnic education will have an early route to specialize in their field of interest and then pursue further specializations if they proceed to university.

## Entry Requirements For Pre-University / Polytechnics

### Bonus Points

Bonus points are given to students in the computation of their net aggregates. These bonus points are for ranking of students during posting.

	Type of Bonus Points	No. of Bonus Points Available	Maximum Bonus Points Allowable
1	Students seeking admission to <b>JC/Poly/ITE</b> and with the following <b>CCA grades</b> :		4 points for JC  2 points for MI/Poly/ITE
	<b>Excellent</b> (student attains min level 3 in all 4 domains with at least a level 4 in one domain)	2 points	
	<b>Good</b> (student attains a min level 1 in all 4 domains with any one of the following: at least level 2 in 3 domains; at least level 2 in 1 domain and at least level 3 in another domain; or at least level 4 in one domain)	1 point	
2	Students seeking admission to <b>JC/MI</b> with grades of <b>A1-C6 for both languages</b> . (English Language & Higher Mother Tongue)	2 points	

### Junior Colleges - L1R5 must be 20 points and below.

<b>Requirements of Core Subjects</b>	<b>Relevant Subjects for L1R5</b>
<ul style="list-style-type: none"> <li>• English Language (A1-C6)</li> <li>• Mother Tongue (A1-D7)</li> <li>• Math or Add Math (A1-D7)</li> </ul>	L1: EL / Higher MT R1: Humanities R2: Math / Science R3: Humanities / Math / Science R4 Any 'O' Level subject except CCA R5: Any 'O' Level subject except CCA

### Millennia Institute - L1R4 of 20 points and below

(www.millennia institute.moe.edu.sg)

<b>Requirements of Core Subjects</b>	<b>Relevant Subjects for L1R4</b>
<ul style="list-style-type: none"> <li>• English Language (A1-C6)</li> <li>• Mother Tongue (A1-D7)</li> <li>• Math or Add Math (A1-D7)</li> </ul>	L1: EL / Higher MT R1: Humanities / Math / Science R2: Humanities / Math / Science R3: Any 'O' Level subject or CCA R4: Any 'O' Level subject or CCA

## Entry Requirements For Poly

**ELR2B2, i.e. English Language (EL) + 2 Relevant Subjects (R2) + 2 other Best Subjects (B2) excluding co-curricular activities (CCA).**

Course Group	ELR2B2-A	ELR2B2-B	ELR2B2-C	ELR2B2-D
<b>EL</b>	English			
<b>R2</b>	1 <sup>st</sup> Group of Relevant Subjects	Elementary Mathematics Additional Mathematics		
	2 <sup>nd</sup> Group of Relevant Subjects	Art Design & Technology Food & Nutrition Principles of Accounts Combined Humanities Geography History Literature in English	Art Principles of Accounts Combined Humanities Geography History Literature in English	Design & Technology Food & Nutrition Computing Biology Chemistry Physics Science (C/B) Science (P/C)
<b>B2</b>	Best 2 other subjects excluding CCA			

### For more information on other Institutions:

LASALLE	<a href="http://www.lasalle.edu.sg">www.lasalle.edu.sg</a>
Nanyang Academy of Fine Arts	<a href="http://www.nafa.edu.sg">www.nafa.edu.sg</a>
ITE Institute of Technical Education : Higher <a href="http://www.nitec.edu.sg">National ITE Certificate (Higher Nitec)</a>	<a href="http://www.ite.edu.sg">www.ite.edu.sg</a>
SHATEC : The Singapore International Hotel and Tourism College	<a href="http://www.sha.org.sg">www.sha.org.sg</a>
CITI : Construction Industry Training Institute	<a href="http://www.bca.gov.sg/citi/">www.bca.gov.sg/citi/</a>



**PEIRCE SECONDARY SCHOOL**  
**STREAMING OPTION WORKSHEET**  
 Secondary 3 (2019) Express

NAME	Sample	INDEX		CLASS (2018)
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**Eligibility to Opt for Subject Combinations**

There are eligibility criteria which are applied to either (i) individual subject within an offered combination or (ii) subject combination as a whole. The table below summarises the criteria used to determine if a subject combination is available during the streaming exercise. **Note:** *The final allocated combination is based on merit and subject to resource availability.*

S/N	Subject / Subject-Combination (Sec 3)	Criteria (Sec 2 Overall Results)	S/N	Subject / Subject-Combination (Sec 3)	Criteria (Sec 2 Overall Results)
1	Additional Mathematics	EITHER C5 or better in Sec 2E Mathematics OR 85 marks or better in Sec 2A Mathematics	5	History	A2 or better in History <i>[Must not be offered with SS(H)]</i>
2	Pure Science	B3 or better in Science	6	Combined Humanities (Social Studies with Geography/History)	No criteria set <i>[Must not be offered with Geography/History respectively]</i>
3	Literature	A2 or better in Literature AND B3 or better in Literature	7	Computing	C5 or better in Sec 2E Mathematics
4	Geography	A2 or better in Geography <i>[Must not be offered with SS(G)]</i>			

**Personalised Subject Combination Matrix**

Based on the criteria listed above, the subjects combinations which you are eligible to opt for during the online streaming exercise is found in the matrix below. Before entering your choices into the streaming system, do use this matrix to discuss with your parents on the order of choice based on your strengths and interest. Please ensure that the choices made in this worksheet are transferred **accurately** as final streaming results will be made based on the information entered online.

Mandatory Subjects: 1. English Language 2. Mother Tongue Language 3. Mathematics	Combination CODE	Subjects	No. of Subjects	M	P	C	B	p	c	b	L	G	H	g	h	T	U	D	A	F	Choice (1/2/3/4/5)	
				Additional Math	Physics	Chemistry	Biology	Science (Phy)	Science (Chem)	Science (Bio)	Literature	Geography	History	Combined Humanities (Geography Elective)	Combined Humanities (History Elective)	Principles of Accounts	Computing	Design and Tech.	Art	Food and Nutrition		
Double Pure Science	A01	7MPCg	7	M	P	C								g								
	A02	7MPCh	7	M	P	C									h							
	A03	7MCBg	7	M		C	B							g								
	A04	7MCBh	7	M		C	B								h							
Science (Physics/Chemistry) with Additional Math and second Humanity	B01	7MpcLg	7	M				p	c		L			g								
	B02	7MpcLh	7	M				p	c		L				h							
	B03	7MpcGh	7	M				p	c			G			h							
	B04	7MpcHg	7	M				p	c				H	g								
Science (Chemistry/Biology) with Additional Math and second Humanity	B05	7McbLg	7	M					c	b	L			g								
	B06	7McbLh	7	M					c	b	L				h							
	B07	7McbGh	7	M					c	b		G			h							
	B08	7McbHg	7	M					c	b			H	g								
Science (Physics/Chemistry) with Principles of Accounts and second Humanity	B09	7pcLgT	7					p	c		L			g		T						
	B10	7pcLhT	7					p	c		L				h	T						
	B11	7pcGhT	7					p	c			G			h	T						
	B12	7pcHgT	7					p	c				H	g		T						
Science (Chemistry/Biology) with Principles of Accounts and second Humanity	B13	7cbLgT	7						c	b	L			g		T						
	B14	7cbLhT	7						c	b	L				h	T						
	B15	7cbGhT	7						c	b		G			h	T						
	B16	7cbHgT	7						c	b			H	g		T						

Mandatory Subjects: 1. English Language 2. Mother Tongue Language 3. Mathematics	Combination CODE	Subjects	No. of Subjects	M	P	C	B	p	c	b	L	G	H	g	h	T	U	D	A	F	Choice (1/2/3/4/5)
				Additional Math	Physics	Chemistry	Biology	Science (Phy)	Science (Chem)	Science (Bio)	Literature	Geography	History	Combined Humanities (Geography Elective)	Combined Humanities (History Elective)	Principles of Accounts	Computing	Design and Tech.	Art	Food and Nutrition	
Science (Physics/Chemistry) with Additional Math and Computing/ Coursework	C01	7MpcgU	7	M				p	c					g			U				
	C02	7MpcgD	7	M				p	c					g				D			
	C03	7MpcgA	7	M				p	c					g					A		
	C04	7MpcgF	7	M				p	c					g							F
	C05	7MpchU	7	M				p	c						h		U				
	C06	7MpchD	7	M				p	c						h			D			
	C07	7MpchA	7	M				p	c						h				A		
	C08	7MpchF	7	M				p	c						h						F
Science (Physics/Chemistry) with Principle of Accounts and Computing/ Coursework	C09	7pcgTU	7					p	c					g		T	U				
	C10	7pcgTD	7					p	c					g		T		D			
	C11	7pcgTA	7					p	c					g		T			A		
	C12	7pcgTF	7					p	c					g		T					F
	C13	7pchTU	7					p	c						h	T	U				
	C14	7pchTD	7					p	c						h	T		D			
	C15	7pchTA	7					p	c						h	T				A	
Science (Chemistry/Biology) with Additional Math and Computing/ Coursework	D01	7McbgU	7	M					c	b				g			U				
	D02	7McbgD	7	M					c	b				g				D			
	D03	7McbgA	7	M					c	b				g					A		
	D04	7McbgF	7	M					c	b				g							F
	D05	7McbhU	7	M					c	b					h		U				
	D06	7McbhD	7	M					c	b					h			D			
	D07	7McbhA	7	M					c	b					h				A		
	D08	7McbhF	7	M					c	b					h						F
Science (Chemistry/Biology) with Principle of Accounts and Computing/ Coursework	D09	7cbgTU	7						c	b				g		T	U				
	D10	7cbgTD	7						c	b				g		T		D			
	D11	7cbgTA	7						c	b				g		T			A		
	D12	7cbgTF	7						c	b				g		T					F
	D13	7cbhTU	7						c	b					h	T	U				
	D14	7cbhTD	7						c	b					h	T		D			
	D15	7cbhTA	7						c	b					h	T				A	
	D16	7cbhTF	7						c	b					h	T					F