



FUCHUN SECONDARY SCHOOL

**SECONDARY 2
STREAMING ONLINE
SELECTION EXERCISE
2022**

**INFORMATION BOOKLET
ON ELECTIVE SUBJECTS
(EXPRESS)**



ITEM**PAGE**

Subject Combinations	3
Additional Mathematics	4
Physics and Biology	5
Art	7
Food and Nutrition	8
Design and Technology	9
English Literature	10
Combined Humanities	11
Entry to JC/CI	13
Entry to Poly	14
Common FAQs	16

Please note that all information is accurate at the point of printing.

CONTENTS



SUBJECT COMBINATIONS

SUBJECTS OFFERED IN 2023

Pure Science:

1. English Language
2. MTLs or HMTLs
3. Mathematics
4. Social Studies & History *or*
Social Studies & Geography
5. Additional Mathematics *or* Pure Literature
6. Pure Chemistry
7. Pure Physics *or* Pure Biology

Combined Science:

1. English Language
2. MTLs or HMTLs
3. Mathematics
4. Social Studies & History *or*
Social Studies & Geography
5. Pure Literature *or* Additional Mathematics
6. Science (Physics & Chemistry) *or*
Science (Chemistry & Biology)
7. D&T *or* Art *or* NFS

Please note that eligibility does not automatically guarantee that the choice will be given.

The overall results and the number of vacancies available need to be taken into account too.



ADDITIONAL MATHEMATICS

WHAT WILL BE COVERED IN SECONDARY 3/4

The syllabus content is organised into three strands, namely, Algebra, Geometry and Trigonometry, and Calculus. Besides conceptual understanding and skill proficiency explicated in the content strand, the development of process skills, namely, reasoning, communication and connections, thinking skills and heuristics, and applications and modelling are also emphasised.

SKILLS REQUIRED

Strong foundation in algebraic manipulation skills and mathematical reasoning skills.

OPPORTUNITIES AT POST-SECONDARY EDUCATION

For students planning to study in a junior college:

Students need to include at least one Mathematics subject in their L1R5. He/She may include both Additional Mathematics and Elementary Mathematics. The Additional Mathematics syllabus also prepares students adequately for A Level H2 Mathematics.

For students planning to study in a polytechnic:

Students may include both Additional Mathematics and Elementary Mathematics. Most polytechnic courses require the applicant to include at least one Mathematics subject.

CAREER PROSPECTS

Expect career opportunities in many diploma or degree courses including engineering, accountancy, finance, banking, business management, architecture and many others.



PHYSICS AND BIOLOGY

Pure Physics / Science Physics

At Fuchun, Physics is offered either as Pure Physics (O-Level subject code: 6091), or Science Physics (O-Level subject code: 5076) in Combined Sciences.

At the Combined Sciences, the study of Science Physics is paired with Science Chemistry.

Physics is crucial to **understanding the world** *around* us, the world *inside* us, and the world *beyond* us. While Chemistry is the central science that brings together Physics and Biology, Physics is the **most basic and fundamental science**. Physics brings a **broad perspective** to any problem, and requires students to examine real-world problems of differing contexts using first principles.

Pure Biology / Science Biology

At Fuchun, Biology is offered either as Pure Biology (O-Level subject code: 6093), or Science Biology (O-Level subject code: 5078) in Combined Sciences.

At the Combined Sciences, the study of Science Biology is paired with Science Chemistry.

Biology is the **study of life**. A Biology education hence provides a foundational understanding about the organisation and interactions at organismal, physiological and molecular levels. In essence, students develop a deeper understanding of **how living organisms and the larger ecosystem work**.



PHYSICS AND BIOLOGY

OPPORTUNITIES AT POST-SECONDARY EDUCATION

For students planning to study in a junior college:

The grade attained in Pure/Combined Science will be used to compute the student's L1R5 aggregate. If the student aspires to pursue a Science course at JC, typically two of the five relevant subjects will involve the Sciences.

JCs would require students pursuing A-Level H2 Physics or Biology to have offered the subject at the O-Levels.

For students planning to study in a polytechnic:

The student's Pure/ Combined Science grade will be relevant for admission into Science- and Design- related courses. Offering Pure/ Combined Physics at the O-Levels would stand the student in better stead to pursue his/her studies in engineering, design and the applied sciences. On the other hand, offering Pure/Combined Biology at the O-Levels would help the student better access courses in the life sciences, biomedical- and biotechnological-related fields.

CAREER PROSPECTS

Given the broad and deep analytical and thinking skills the study of Physics/Biology hones in our students, students can look forward to exciting and meaningful careers in STEM (e.g. pharmacy, dentistry, medicine, engineering, applied sciences, nursing, mathematics, architecture, design, etc.) and beyond (e.g. accountancy, banking, finance, business, early childhood, as well as the arts and social sciences).



WHAT WILL BE COVERED IN SECONDARY 3/4

- Experiment on different mediums
- Develop individual Ideas & preferences
- Exposure to local/foreign artists' works
- Coursework
 - Paper 1: A2—A1 art piece + 8 A2-sized boards preparatory work
 - Paper 2: 3 hours with 5 pieces of A3-sized preparatory boards

SKILLS YOU WILL LEARN

- Drawing, colouring and painting
- Creativity and personal touch
- Thinking out of the box
- Critical thinking
- Fortitude and motivation to finish art pieces
- Be more independent in learning

OPPORTUNITIES AT POST-SECONDARY EDUCATION

At Tertiary level (University, Polytechnics):

Art is useful if you would like to pursue a course which involves a level of creative work (e.g. Animation, Photography, Videography, Website design, Product design, Game/software design, Fashion Design and Advertising). You need a good knowledge of the Elements of Arts & Principles of design, to create interesting compositions.

It is possible to go for the above-mentioned courses without pursuing 'O' Level Art. However, most of these courses will require you to take on basic Art classes. Even if the student's aggregate does not meet the cut off point of the said course, they are able to go for interviews and present their portfolios. The Art student will definitely have an advantage over other candidates. On the other hand, Art schools such as, Nanyang Academy of Fine Arts (NAFA), require candidates to sit through an Art examination before being accepted as a student.

CAREER PROSPECTS

Children's/Adult Art Therapist (Psychiatrist), Museum Curators, Conservator/Restoration of museum pieces .



NUTRITION AND FOOD SCIENCE

WHAT WILL BE COVERED IN SECONDARY 3/4

- Coursework (60%)
 - Conducted during curriculum (28 hrs).
 - 25 page report detailing the investigative study made on a given question.
- Theory (40%)
 - The principles of nutrition and the concept of a balanced diet in meal planning.
 - The relationship between nutrition and health .
 - Making informed food choices regarding a healthy diet .
 - The basic principles underlying food preparation .

SKILLS YOU WILL LEARN

- Research and investigation.
- Synthesising information.
- Analytical skills.
- Drawing conclusions and providing scientific reasons for outcomes.
- Writing a report to substantiate findings.

OPPORTUNITIES AT POST-SECONDARY EDUCATION:

Singapore does not offer Nutrition and Food Science (NFS) at 'A' Levels.

Students who are considering taking the 'A' level route but are interested in taking up NFS because of an interest in careers that are related to NFS can still consider pursuing the subject at 'O' levels. It can serve as a good foundation of knowledge should they choose to pursue a degree overseas after the 'A' level exams.

Relevant Polytechnic courses include Food Science and Technology, Nutrition, Health and Wellness, Applied Food Science & Nutrition, Baking & Culinary Science, Pharmaceutical Science, Food Science & Nutrition, Nursing and Pharmacy Science.



DESIGN AND TECHNOLOGY

WHAT WILL BE COVERED IN SECONDARY 3/4

- Higher complexity involved in Artefact Realisation
- Requires the mastery of workshop equipment and processes
- Detailed research and analysis to understand the needs of the situation
- Generating annotated sketches that help students think through their solutions
- Coursework (70%) + Theory (30%)

SKILLS YOU WILL LEARN

- Sourcing and collating information
- Record observations
- Analysing and making interpretations
- Producing clear sketches that communicate ideas visually
- Writing clearly to express one's thinking
- Generating creative and innovative solutions that solve identified needs

OPPORTUNITIES AT POST-SECONDARY EDUCATION

For students planning to study in a junior college:

While not directly relevant to any H2 subject in Junior College, skills obtained in the study of Design and Technology is relevant and useful in H1 Project Work.

For students planning to study in a polytechnic:

Design and Technology is one of the subjects that is required to be read should the student wish to take up courses in the area of Engineering, Design or Architecture.

CAREER PROSPECTS

Expect career opportunities in engineering, architecture, digital animation and design.



ENGLISH LITERATURE

WHAT WILL BE COVERED IN SECONDARY 3/4

- Paper 1: Set Text (Novel) and Unseen Poetry
- Paper 2: Drama Text

STUDENTS WHO COMPLETE THIS COURSE IN LITERATURE WILL BE

- empathetic and global thinkers who are open to multiple perspectives through the study of texts from different parts of the world;
- critical thinkers who will appreciate the aesthetic value and enjoy the nuances of language, with perspective and questioning minds;
- creative meaning-makers who embrace ambiguity and uncertainty as necessary in the meaning making process;
- convincing communicators who convince others of their interpretations, based on sound reasoning with evidence.

OPPORTUNITIES AT POST-SECONDARY EDUCATION:

Students will find the skills they pick up through studying literature relevant to any course in tertiary education that requires extensive reading in English.

For students planning to study in a junior college:

Knowledge and skills obtained at 'O' Level Literature will be helpful should the student wish to pursue Literature at H2 level.

For students planning to study in a polytechnic:

Skills obtained in the course of study of Literature will be useful should the student be interested in taking up courses in legal studies, mass media, broadcast or journalism.

CAREER PROSPECTS:

Expect career opportunities in education, copyrighting and editorial domains, journalism media and broadcasting, law, human resource, film production, theatrical productions and public relations.



COMBINED HUMANITIES

WHAT WILL BE COVERED IN SECONDARY 3/4

Social Studies

Social Studies seeks to develop the competencies of our students to be informed, concerned and participative citizens. These competencies encompass the body of knowledge, skills and values expressed in the Philosophy of Social Studies and they are elaborated below.

As ***informed*** citizens, students would:

- understand their identity as Singaporeans with a global outlook;
- understand different perspectives;
- view the world with an understanding of the Singapore perspective;
- apply reflective thought in making quality decisions;
- analyse, negotiate and manage complex situations; and
- evaluate information, consider different viewpoints and exercise discernment in reaching well-reasoned conclusions and making responsible decisions.

As ***concerned*** citizens, students would:

- have a sense of belonging to their community and nation;
- appreciate the importance of engaging in issues of societal concern;
- be committed to building social cohesion by appreciating diversity in society; and
- have an awareness of the ethical considerations and consequences of decision-making.

As ***participative*** citizens, students would:

- be motivated to identify issues of concern and take action;
- be resilient in addressing concerns of the community or society in spite of challenges faced; and
- be empowered to take personal and collective responsibility for effecting change for the good of society, and serve to make a positive difference to others.

History

History education seeks to develop in students a critical appreciation of past human experiences and connections between the past and present. In a world where attention is often divided between



COMBINED HUMANITIES

concerns over the present and future, the relevance of History is often questioned. Learning to manage the present and anticipate the future would not be possible without knowing the past. By equipping students with knowledge and attributes, History allows students to draw connections between the past and present by understanding how the nature and impact of past developments explain today's world. History does so by helping learners to become balanced, discerning, empathetic, enquiring, knowledgeable and methodical individuals able to make well-reasoned arguments and decisions.

Geography

Geography builds on students' experiences and prior knowledge to examine the physical and human phenomena found on Earth as well as their complex interactions and patterns across space. Geography emphasises the integrative study of physical and human environments to enable students to gain a better understanding of their own space and other parts of the world. It also focuses on the interconnectedness among groups of people, and between people and their environment.

SKILLS REQUIRED

Students need to infer, compare information, test source reliability as well as evaluate the sources. Students need to gather and analyse information with an enquiring mind to seek answers cognisant of the varying perspectives to issues affecting our lives and the world we live in.

OPPORTUNITIES AT POST-SECONDARY EDUCATION:

For students planning to study in a junior college:

Humanities is a relevant subject required in L1R4/5. This is also important for students intending to study A Level H2 History or Geography at the advanced level.

For students planning to study in a polytechnic:

Humanities is a relevant subject for all business courses.

CAREER PROSPECTS:

Expect career opportunities as a Foreign Correspondent, Lawyer, Journalist, Linguist, Interpreter, Curator, Teacher, Tourism related fields, Public Relations, Human Resource



ENTRY TO JC/CI

Entry to Junior College

Aggregate of EL & 5 Relevant subjects (L1R5) must be less than or equals to 20 points.

L1—English/Higher Mother Tongue

R1—Humanities

R2—Math/Science

R3—Humanities/Math/Science

R4—Best other subject (excluding CCA and Religious Knowledge)

R5—Best other subject (excluding CCA and Religious Knowledge)

Entry to Centralised Institute

Aggregate of EL & 4 Relevant subjects (L1R4) must be less than or equals to 20 points.

L1—English/Higher Mother Tongue

R1—Humanities

R2—Math/Science

R3—Humanities/Math/Science

R4—Best other subject (excluding CCA and Religious Knowledge)

Bonus Points

Excellent CCA Grade = 2 bonus points

Good CCA Grade = 1 bonus point

Pass EL and Higher MT = 2 bonus points

Example

Subject	Grade	Subject	Grade
EL	B3	MT	B3
Math	B3	Add Math	B3
Humanities	B3	D & T	B3
Science	B3	CCA	Excellent

For a student who achieves B3 in every subject and achieves an Excellent CCA grade,

Total L1R5: 18 points

With CCA bonus points, aggregate score: $18 - 2 = 16$



ENTRY TO POLY

Entry to Polytechnic

Aggregate of ELR2B2 is used for admission into the Polytechnics.

L1	English	
R1	Course A:	Art/Combined Humanities/Geography/History/Lit
	Course B, C, D	Elementary Math/Additional Math
R2	Course A:	Add Math/E Math/D&T/Combined Humanities/Lit
	Course B:	Art/Geography/History/Combined Humanities/Lit
	Course C,D	D&T/NFS/Chemistry/Physics/Biology/Combined Science
B2	Best 2 other subjects excluding CCA	

Course A: Humanities related courses

Course B: Business related courses

Course C: Science related courses

Course D: Design related courses

Bonus Points

Excellent CCA Grade = 2 bonus points

Good CCA Grade = 1 bonus point

Pass EL and Higher MT = 2 bonus points



Example

For a student who achieves B4 in every subject and achieves an Excellent CCA grade,

Subject	Grade	Subject	Grade
EL	B4	MT	B4
Math	B4	Add Math	B4
Humanities	B4	D & T	B4
Science	B4	CCA	Excellent

Total ELR2B2: 20 points

With CCA bonus points, aggregate score: $20 - 2 = 18$

Information on available polytechnic courses:

<https://www.moe.gov.sg/coursefinder>

The actual points differ for each polytechnic and may vary each year.



COMMON FAQs

S/ N	Question	Answer
1	How do the students exercise their streaming options?	Students will log onto their student ICON e-mail to exercise their option. A briefing will be conducted for the students in October to provide them with more details.
2	What happens if a student did not exercise his/her online option during the required period?	The student shall forfeit his/her chance to exercise his/her option. The school shall allocate the student's class and subject combinations based on his/her merit and the course vacancy.
3	If a student is not allocated the combination/elective of his/her choice, can an appeal be made?	Yes, an appeal can be made within the stated appeal period. The success of the appeal depends on the student's merit, specific subject criteria and the course vacancy.
4	What happens if a student did not submit his/her appeal (if any) within the appeal period?	Late submission will not be accepted. The student shall forfeit his/her chance to make the appeal.
5	Is it possible for a student to change his/her subject in future?	Preparation for O/N Levels begins in Sec 3. It is not advisable for students to change their subject combinations at Sec 3/4.



COMMON FAQs

S/ N	Question	Answer
6	Why is Additional Mathematics a pre-requisite for Pure Physics?	<p>The study and practice of Physics require extensive use of models, especially those expressed in mathematical language, to explain observations and make predictions.</p> <p>Additional Mathematics provide opportunities to acquire problem-solving and reasoning heuristics in more advanced mathematical topics such as exponential functions, polynomials, linear laws and basic calculus, which are required to appreciate the use of models in the study and practice of Physics.</p>
7	Is Additional Mathematics a compulsory subject for admission into JC or Polytechnic?	<p><u>Junior College</u></p> <p>Students without Additional Mathematics usually offer A-Level H1 Mathematics.</p> <p>Additional Mathematics is an assumed knowledge for A-Level H2 Mathematics, however, different JCs have different criteria in offering H2 Mathematics.</p> <p><u>Polytechnic</u></p> <p>Additional Mathematics is not compulsory for Polytechnic courses.</p> <p>For courses which require Mathematics as one of the relevant subjects, the Mathematics can be either Elementary Mathematics or Additional Mathematics.</p>



COMMON FAQs

S/ N	Question	Answer
8	Why doesn't the school just offer triple pure sciences?	<p>Trend data has shown that our students do better with double sciences as they prioritise and focus their time on attaining a high grade in both sciences, improving their L1R5 for JC entry.</p> <p>Taking double pure sciences at the O-Levels does not disadvantage your child in furthering his/her study of the sciences at the A-Levels.</p>
9	Why is there a minimum criteria for taking Pure Sciences?	<p>Pursuing the pure sciences is a much more rigorous commitment than pursuing the combined sciences at O-Levels. The pure sciences curriculum equips students with the necessary content, skills and attitudes to further their study of A-Levels H2 Sciences at the Junior College (JC).</p>



COMMON FAQs

S/ N	Question	Answer
10	Why is Chemistry a common science offered for both Pure and Combined Sciences?	Chemistry is widely considered a central science. It is often a compulsory subject in the admissions criteria for many science-related courses at the polytechnics and universities, including Medicine, Dentistry and Pharmacy. Biology is not a compulsory subject for the applicant to be considered for admission in the above-mentioned courses.
11	Why is Elective Literature not offered in the Express stream?	This is to ensure there is critical mass for every subject offered. We also take into consideration how we can best deploy our Literature-trained teachers. Under the electives, students are already offered a choice between Elective History or Elective Geography. Express stream students interested in Literature are encouraged to offer Full Literature instead.