



S3IM0006C

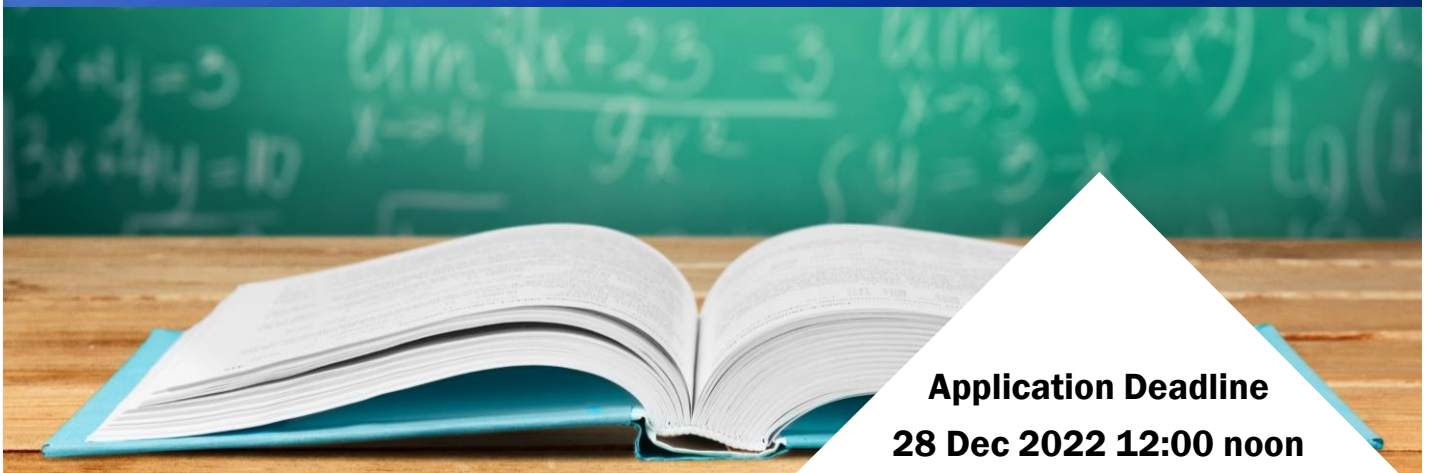
(Token- required)

Advanced Course in  
Mathematical Olympiad

# International Mathematics Olympiad Training 2022-23 (Phase III) Level 1

Dr Leung Tat Wing and other trainers

English version only 只供英文版



**Result Release**  
**29 Dec 2022**

## **Intended Learning Outcomes**

Upon completion of the programme, participants should be able to:

1. broaden their mathematical knowledge in a variety of areas on the basis of senior secondary mathematics curriculum;
2. learn more about the scope of International Mathematical Olympiad Training;
3. strengthen their problem solving and higher-order thinking skills.



## ◆ Introduction

- A comprehensive mathematics programme which covers such as Algebra, Number Theory, Geometry and Combinatorics
- Introduce the basic curriculum of the International Mathematics Olympiad competition
- Broaden student's mathematical knowledge, strengthen their problem solving, higher order and logical thinking skills
- Training consists of 3 Phases: Phase I (Jul – Sep), Phase II (Sep – Dec) and Phase III (Jan – Mar 2023)
- Students with outstanding performance in the programme would be selected as the representatives of Hong Kong in the 64<sup>th</sup> IMO 2023

The International Mathematical Olympiad Training programmes are co-organized with International Mathematical Olympiad Hong Kong Committee (IMOHKC)

## ◆ Target Participants

NON-HKAGE Student members who

- were awarded **Honourable Mention or above in IMO Preliminary Selection Contest – Hong Kong**

HKAGE Student members who

- were awarded **Honourable Mention or above in IMO Preliminary Selection Contest – Hong Kong** **or**
- have completed **any Phase of CGMO** **or**
- have completed **any Phase of ITOM training with Distinction**

Class size: 50

This programme is the same as E3IM0004C in the school year 2021/22

## ◆ Certificate

E-Certificate will be awarded to participants who have:

- attended **at least 8 sessions**; and
- completed all the assignments with satisfactory performance

## ◆ Medium of Instruction

Cantonese with English Handouts



## ◆ Schedule

Session	Date	Time	Venue
1	7 Jan 2023 (Sat)	14:00 – 17:00	Room 303, HKAGE
2	14 Jan 2023 (Sat)	14:00 – 17:00	Room 303, HKAGE
3	28 Jan 2023 (Sat)	14:00 – 17:00	Room 303, HKAGE
4	4 Feb 2023 (Sat)	14:00 – 17:00	Room 303, HKAGE
5	11 Feb 2023 (Sat)	14:00 – 17:00	Room 303, HKAGE
6	18 Feb 2023 (Sat)	14:00 – 17:00	Room 303, HKAGE
7	25 Feb 2023 (Sat)	14:00 – 17:00	Room 303, HKAGE
8	4 Mar 2023 (Sat)	14:00 – 17:00	Room 303, HKAGE
9	11 Mar 2023 (Sat)	14:00 – 17:00	Room 303, HKAGE
10	14 Mar 2023 (Tue)	09:00 – 13:00	Room 105, HKAGE

Remarks:

- Students **MUST ATTEND** the APMO test held on **14 Mar 2023**. No make-up test will be arranged.



## ◆ Appendix - IMO-related Programmes

- IMO-related programmes is a series of programmes that provide International Mathematics Olympiad (IMO) related training. It aims to equip students with the mathematics knowledge and curriculum of IMO, problem solving skills, and high-order thinking skills progressively.
- The programmes are divided into three levels: Introductory, Intermediate, and Advanced level.
- There are different enrollment methods, e.g. aptitude test. For details, please refer to each programme's poster

### Introductory Level

#### Maths Ignition (MI) Programmes

- For S1-S3 HKAGE student members
- Introductory training in Mathematical Olympiad by topics
- Application for five MI programmes will be open in Apr, Jul & Oct each year
- Enroll through aptitude test

### Introductory to Intermediate Level

#### Introduction to Olympiad Mathematics (ITOM)

- For S1-S6 HKAGE student members
- Two phases of training
- Application will be open in Jan each year
- Enroll through aptitude test
- Students who have completed at least 2 MI programmes could enroll directly

### Introductory to Advanced Level

#### China Girls Mathematics Olympiad (CGMO) Trainings

- For S1-S6 HKAGE female HKAGE student members
- Three phases of training
- Application will be open in Jan each year
- Enroll through aptitude test
- CGMO HK Team members will be selected based on their performance in the trainings

### Advanced Level

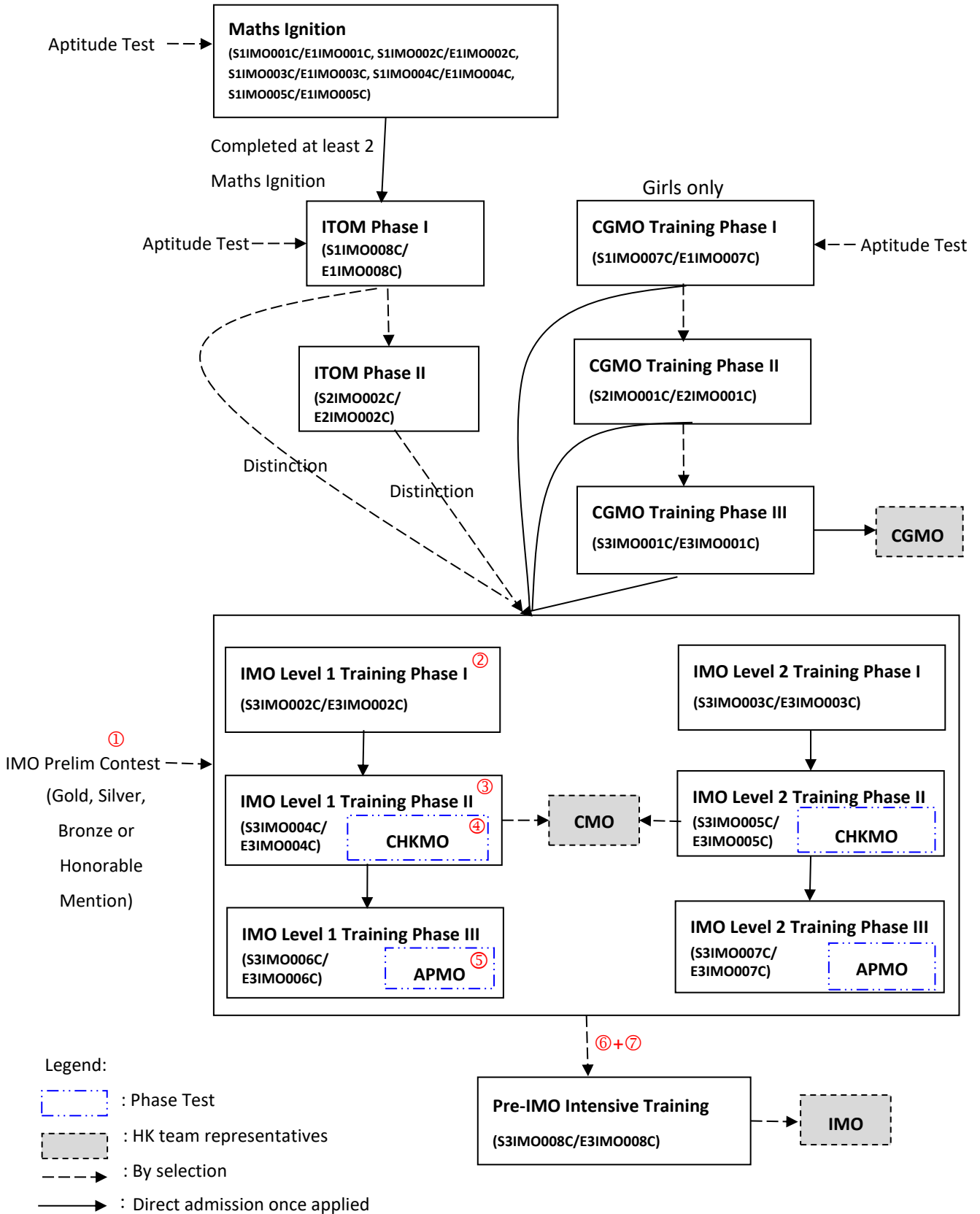
#### International Mathematics Olympiad (IMO) Trainings

- For all awardees of IMO Preliminary Selection Contest - Hong Kong; OR students who got the certificate of distinction in any phases of ITOM training; OR students who have completed any phases of CGMO training
- Three phases of training
- IMO HK Team members will be selected based on their performance in the trainings and IMO Preliminary Selection Contest - Hong Kong

\*Detail flowchart and timeline, please refer to next page.



## International Mathematical Olympiad Related Programmes



**Remarks:**

ITOM – Introduction to Olympiad Mathematics  
 CGMO – China Girl’s Mathematical Olympiad  
 IMO – International Mathematical Olympiad

CHKMO – Hong Kong (China) Mathematical Olympiad  
 CMO – Chinese Mathematical Olympiad  
 APMO – Asian Pacific Mathematics Olympiad

IMO HK Team representatives are selected based on their performance in the assessments from ① through ⑦

# IMPORTANT information for International Mathematical Olympiad (IMO) Training

<b>Phase Trainings</b>			
<b>Eligibility</b>			
<ul style="list-style-type: none"> <li>● IMO Preliminary Selection Contest awardees ① or</li> <li>● Student members who have been a trainee in any phase of the IMO Training or</li> <li>● Student members who have completed any phase of CGMO Training or</li> <li>● Student members who have completed any phase of ITOM Training with Distinction</li> </ul>			
Training /Competition	Content	Excepted Schedule	Remark
<b>Phase I Training</b>	13 x 3-hr lessons	Jul - Aug	
	Test 1 ② 3 hr, 6 proof problems	Aug	<ul style="list-style-type: none"> <li>✧ Phase test</li> <li>✧ No make-up test</li> </ul>
<b>Phase II Training</b>	17 x 3-hr lessons	Sep - Dec	
	Test 2 ③ 3 hr, 4 proof problems	Oct	<ul style="list-style-type: none"> <li>✧ Phase test</li> <li>✧ No make-up test</li> </ul>
	CHKMO ④ 3 hr, 4 proof problems	Dec	<ul style="list-style-type: none"> <li>✧ Phase test</li> <li>✧ No make-up tests</li> </ul>
<b>CMO</b>	2 days x 4.5 hr, 3 proof problems	Dec or Jan	6# students selected based on Prelim ①, Test 1 ②, and Test 2 ③
<b>Phase III Training</b>	8 x 3-hr lessons	Jan - Mar	
	APMO ⑤ 4 hr, 5 proof problems	Mar	<ul style="list-style-type: none"> <li>✧ End-of-phase test</li> <li>✧ No make-up test</li> </ul>
<b>Selection Tests for Pre-IMO Intensive Training</b>	Test 3 ⑥ 4.5 hr, 3 proof problems Test 4 ⑦ 4.5 hr, 3 proof problems	Apr or May	18 students selected based on Prelim ①, Test 1 ②, Test 2 ③, CHKMO ④ and APMO ⑤  ✧ No make-up tests
<b>Pre-IMO Intensive Training</b>	IMO HK Team (6 students) & Alternate Team (6 students),		12 students selected based on Prelim ①, Test 1 ②, Test 2 ③, CHKMO ④, APMO ⑤, Test 3 ⑥ and Test 4 ⑦
<b>IMO</b>	2 days x 4.5 hr, 3 proof problems @		IMO HK Team
<b>CGMO</b>	2 days x 4 hr, 4 proof problems @		8# female students selected via CGMO Training (NOT IMO Training)

# Subject to change. May vary from year to year.

IMO HK Team representatives are selected based on their performance in the assessments from ① through ⑦

## Useful websites

IMO official website:	<a href="http://www.imo-official.org">www.imo-official.org</a>
IMO 2017 website:	<a href="http://www.imo2017.org.br/">http://www.imo2017.org.br/</a>
Art of Problem Solving:	<a href="http://www.artofproblemsolving.com">www.artofproblemsolving.com</a>
Mathematical Database:	<a href="http://www.mathdb.org">www.mathdb.org</a>
IMO 2016 Facebook page:	<a href="https://www.facebook.com/imo2016">www.facebook.com/imo2016</a>
IMO 2016 newsletter IMOment:	<a href="http://www.edb.gov.hk/tc/curriculum-development/kla/ma/IMO/IMOment.html">www.edb.gov.hk/tc/curriculum-development/kla/ma/IMO/IMOment.html</a>
Mathematical Excalibur:	<a href="http://www.math.ust.hk/excalibur/">www.math.ust.hk/excalibur/</a>
reference list recommended by IMOHKC	<a href="https://docs.google.com/spreadsheets/d/1I4GNYbY2eDPPKCnD4lpnYuqNenJV0-3NgKUMDh6m5ow/edit?usp=sharing">https://docs.google.com/spreadsheets/d/1I4GNYbY2eDPPKCnD4lpnYuqNenJV0-3NgKUMDh6m5ow/edit?usp=sharing</a>