香 港 資 優 教 育 學 苑
The Hong Kong Academy for Gifted Education

The "Safe Cracking" International Physics Tournament Training Phase I (E4PHY001C)

Introduction	This course aims to provide experimental physics training and apply physics principles to develop a locking mechanism (Safe) for the "Safe Cracking" International Physics Tournament (IPT). The safe development may involve Apps development (App Inventor), microcontroller interfacing and programming, concepts of analog and digital data, relay controls, applications of sensors, data measurements, mechanical drawing using 3D printer, and electronics with circuit board development. Training to break in other teams' safe will also be provided. To strengthen the above experimental skills, theoretical physics training may also be given.
Programme Type / Level	Physics Course (Level IV) (Token-required)
Instructor(s)	Dr CHAN Mau Hing (Lecturer, The Department of Physics, Hong Kong Baptist University)
Pre-requisite	No special prerequisites are needed, but preferably has talent in development skills in physics experimental setup, experience in conducting experimental physics, and good communication and presentation skills in English.
Target Participants	➢ S3 to S4 HKAGE student members in 2020/21 school year only ➢ Class size: 10 This programme is the same as Advanced Course in Physics: International Physics Tournament Training (Safe Cracking) Phase I (SCIS3011) in 2019/20 school year.
Medium of Instruction	English (supplemented with Cantonese) with English handouts
Certificate	**E-Certificate** will be awarded to participants who have: ❖ Attended **at least 3 sessions** AND ❖ Completed all the assessments with **satisfactory performance**.
Intended Learning Outcomes	Upon completion of the programme, participants should be able to: • understand the syllabus of IPT; • develop a safe to meet the standard of IPT; • apply concepts in physics to design multiple locking mechanisms for building a safe; • apply physics knowledge to break in other teams' safe in IPT; AND • develop team spirit and apply their collaborative skills in designing and developing a safe, and in breaking in other teams' safe.
Screening	Please answer the screening question in the online application form. *The screening question is designed to help the applicant understands the course level and the course content. The question must be answered by the student applicant and it can only be attempted once. The answer cannot be changed once the application is submitted. Selection is based on students' performance in answering the question. Only students who can demonstrate motivation and the knowledge of Physics in the screening question can be enrolled in the programme.

Application Deadline	**15 Jun 2021, 12:00 n.n**	Application Result Release Date	**25 Jun 2021**

If student members withdraw from the programme after the Application Deadline, the token will be deducted.

Schedule

Session	Date	Time	Venue (HKAGE)
1	29 Jul	9:30 a.m. – 12:30 p.m.	Room 206
2		1:30 p.m. – 4:30 p.m.	
3	20 Aug	9:30 a.m. – 12:30 p.m.	
4		1:30 p.m. – 4:30 p.m.	

Remarks:

1. Phase I students must attend the selection test at 1:30 p.m. - 4:30 p.m. on 20 Aug for selection to join Phase II training. Zero mark will be given for those whose are absent from the selection test.
2. Promotion to Phase II: The 5 best-performing students in Phase I selection test will be selected to join Phase II training (around Sep 2021 - Feb 2022) and 1-week IPT in Israel (around Mar - Apr 2022). For details, please visit the official website of IPT: https://davidson.weizmann.ac.il/en/programs/cracking. Furthermore, you can watch the video of IPT 2019 via the following link for more information: https://youtu.be/SAI0heCjZgQ.
3. Tentative arrangement for Phase II training is 10 sessions on: 25 Sep 2021, ~~23 Oct~~ 6 Nov 2021, 27 Nov 2021, 8 Jan 2022, 19 Feb 2022; at 9:30 a.m. - 12:30 p.m. and 1:30 p.m. - 4:30 p.m.

Sample Notes

Assessments of the Shalheveth Freier International Physics Tournament

1. Interview with our Team by the Referees (45%)
   Give explanations of physics concepts and demonstrate operation principles of our Safe.
2. Assessment by peer groups, or the burglars (20%)
   Needs to have good social communication and presentation skills.
3. Number of successful break-ins into other teams' Safes (25%)
   Needs physics concepts and excellent experimental skill to break in other teams' Safe.
4. Number of incidents that our Safe withheld a break-in by other Teams (10%)

Enquiries

For enquiries, please contact Academic Programme Development Division on 3940 0101, after language selection, press "1".