



Advanced Course in Physics: International Physics Tournament Training (Safe Cracking) Phase II (SCIS3012)

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	Advanced Course in Physics (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	<ul style="list-style-type: none">➤ S4 to S6 HKAGE student members in 2020/21 school year only➤ Class size: 5➤ Students who have obtained Merit in the Advanced Course in Physics: International Physics Tournament Training (Safe Cracking) Phase I (SCIS3011)
Medium of Instruction	English (supplemented with Cantonese) with English handouts
Certificate	E-Certificate will be awarded to participants who have: <ul style="list-style-type: none">❖ Attended at least 8 sessions; AND❖ Completed all the assignments with satisfactory performance
Intended Learning Outcomes	Upon completion of the programme, participants should be able to: <ol style="list-style-type: none">1. understand the syllabus of IPT;2. develop a safe for the competition of IPT;3. apply physics concept to design a locking mechanism for building a safe;4. apply physics pknowledge to break in other teams’ safe in IPT; and5. develop team spirit and apply their collaborative skills in designing and developing a safe, and in breaking in other teams’ safe.

Schedule

Session	Date	Time	Venue
1	19 Sep 2020	9:30 a.m. - 12:30 p.m.	OEE802 (Lab), Oen Hall Building, Ho Sin Hang Campus, Hong Kong Baptist University ¹
2		1:30 p.m. - 4:30 p.m.	
3	17 Oct 2020	9:30 a.m. - 12:30 p.m.	
4		1:30 p.m. - 4:30 p.m.	
5	21 Nov 2020	9:30 a.m. - 12:30 p.m.	
6		1:30 p.m. - 4:30 p.m.	
7	9 Jan 2021	9:30 a.m. - 12:30 p.m.	
8		1:30 p.m. - 4:30 p.m.	
9	20 Feb 2021	9:30 a.m. - 12:30 p.m.	
10		1:30 p.m. - 4:30 p.m.	

¹ Address: Kowloon Tong, Kowloon, Hong Kong ([Map](#))

Remarks:

1. Students of this training course need to attend The "Safe Cracking" International Physics Tournament 2021 in Israel on 16-17 Mar 2021. 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>.
2. Please note that students need to pay partial cost for the trip to Israel. You can refer to last year's webpage <https://www.hkage.org.hk/en/activities/detail/5557> for reference. Updated information for the trip of IPT 2021 will be provided later.

Sample Note

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".