

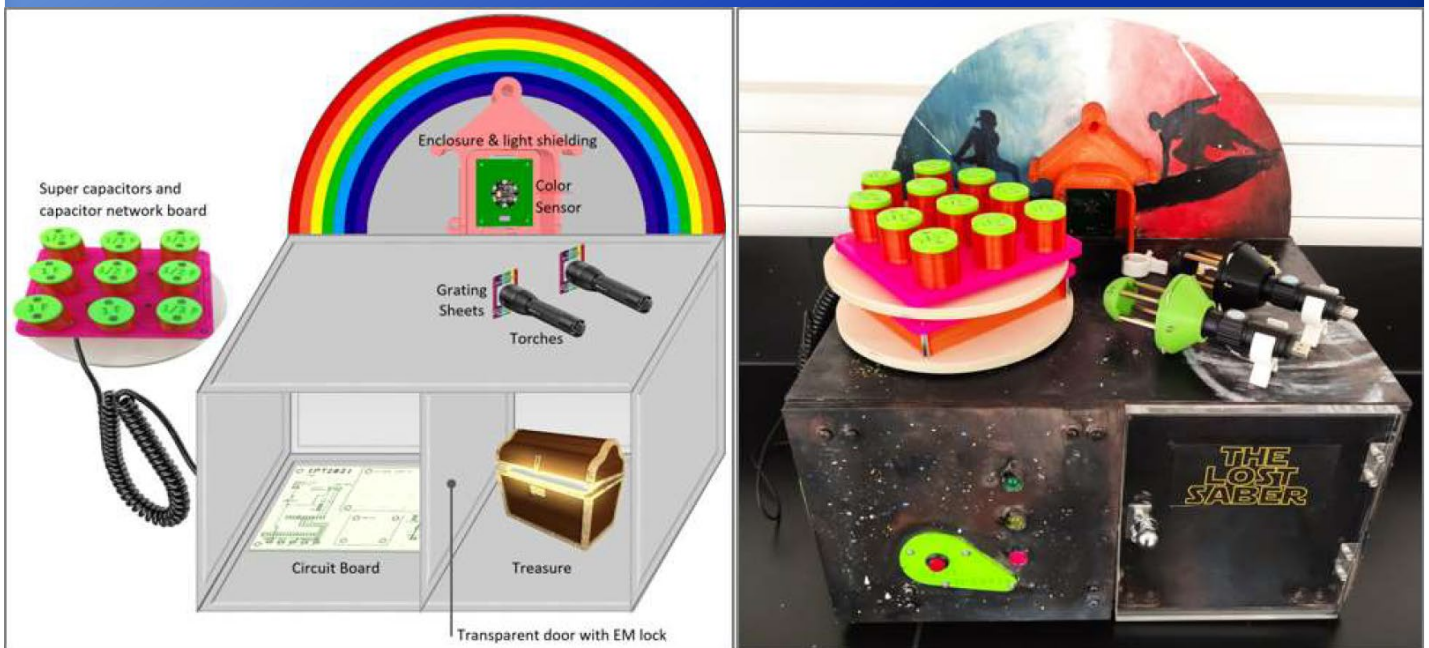


Physics Course (Level III):

The “Safe Cracking” International Physics Tournament Training

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Intended Learning Outcomes

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

1. apply concepts in physics to design multiple locking mechanisms for building a safe;
2. build a safe to meet the standard of International Physics Tournament (IPT);
3. apply physics knowledge to break in other teams' safes in IPT; and
4. develop team spirit and apply their collaborative skills in designing and developing a safe, and in breaking in other teams' safes.



◆ Introduction

This training programme series 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 app 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’ safes will also be provided. To strengthen the experimental skills, theoretical physics lectures would also be given.

◆ Schedule

Session	Date	Time	Venue
1	2 Dec 2023	9:30 a.m. – 12:30 p.m.	OEE802 (Lab), Oen Hall Building, Ho Sin Hang Campus, Hong Kong Baptist University (MAP)
2		1:30 p.m. – 4:30 p.m.	
3	30 Dec 2023	9:30 a.m. – 12:30 p.m.	
4		1:30 p.m. – 4:30 p.m.	
5	20 Jan 2024	9:30 a.m. – 12:30 p.m.	
6		1:30 p.m. – 4:30 p.m.	
7	3 Feb 2024	9:30 a.m. – 12:30 p.m.	
8		1:30 p.m. – 4:30 p.m.	
9	24 Feb 2024	9:30 a.m. – 12:30 p.m.	
10		1:30 p.m. – 4:30 p.m.	
11	16 Mar 2024	9:30 a.m. – 12:30 p.m.	
12		1:30 p.m. – 4:30 p.m.	

Remarks:

1. Students of this training course need to attend the 1-week “Safe Cracking” IPT 2024 in Israel (around early April 2024). 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 2023 via the following link for more information: <https://youtu.be/Clr2oxhSanc>.



◆ Target Participants

- S3 to S5 students in 2023/24 school year
- Class size: 5

Students are selected from The “Safe Cracking” International Physics Tournament 2024 – Hong Kong Final.

◆ Medium of Instruction

English (supplemented with Cantonese) with English handouts

◆ 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.

◆ Certificate

E-Certificate will be awarded to participants who have:

- attended at least 9 sessions; and
- completed all the assignments with satisfactory performance.