



The Shalheveth Freier International Physics Tournament

Phase II Training (SCIS3012)

Introduction

This course aims to provide experimental physics training and apply physics principles to develop a locking mechanism (safe) for the international competition of the Shalheveth Freier International Physics Tournament. The safe development may involve Apps development (App Inventor), microcontroller interfacing and programming, concepts of analog and digital data, motor 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 from Hong Kong Baptist University

Pre-requisite

No special prerequisites are needed, but an innovative mind in physics experimental setup and good communication/presentation skills are preferable.

Target Participants



- S4 – S5 HKAGE student members
- Class size: 5
- Students who have successfully completed The Shalheveth Freier International Physics Tournament Phase I Training (SCIS3011)

Medium of Instruction



Cantonese with English handouts

Certificate



E-Certificate will be awarded to participants who have:

- ❖ Attended **at least 6 sessions; AND**
- ❖ Completed all the assignments with **satisfactory performance**

Intended Learning Outcomes



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

1. Develop a safe for the competition of the Shalheveth Freier International Physics Tournament;
2. Apply their physics knowledge on building and designing the locking mechanism of the safe;
3. Develop collaborative skills during the development of the safe.

Schedule



| Session | Date | Time | Venue (HKBU) |
|---------|--------|---|--|
| 1 | 13 Oct | 9:30 a.m. – 12:30 p.m. 2:00 p.m. – 5:00 p.m. | OEE 802, Oen Hall Building Ho Sin Hang Campus Hong Kong Baptist University |
| 2 | | | |
| 3 | 10 Nov | | |
| 4 | | | |
| 5 | 28 Dec | 9:30 a.m. – 12:30 p.m. | OEE 802, Oen Hall Building |
| 6 | | 2:00 p.m. – 5:00 p.m. | Ho Sin Hang Campus Hong Kong Baptist University |
| 7 | 9 Feb | 9:30 a.m. – 12:30 p.m. 2:00 p.m. – 5:00 p.m. | OEE 802, Oen Hall Building Ho Sin Hang Campus Hong Kong Baptist University |
| 8 | (2019) | | |
| 9 | 9 Mar | | |
| 10 | (2019) | | |

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%)

1st Place in 2015: Water Dispenser



Enquiries



For enquiries, please contact us at 3940 0101 after language selection, press "1".