

Administrative Instructions for SpaceCube Workshop

Introduction

BrainHack's SpaceCube Workshop is jointly conducted by the Defence Science and Technology Agency (DSTA) and the National University of Singapore (NUS)'s Engineering Design & Innovation Centre. The workshop will be held at the **NUS Engineering Fabrication Lab (E4-02-06, NUS Engineering) from 6 to 17 June 2022**. Please read this set of admin instructions to prepare yourself for the workshop.

This instruction contains the following :

1. Antigen Rapid Test (ART) Testing
 2. Footwear requirement
 3. Workshop schedule
 4. Things to bring (per group)
 5. CubeSat Integrator Medal
 6. [Map and directions to the Fabrication Laboratory](#) : Please refer to pages 4
 7. [Map and direction to the TechnoEdge Canteen](#) : Please refer to page 6
 8. [NUS Guest Wifi Login Access](#) : Please refer to page 7
 9. [Contact and Emergency Numbers](#) : Please refer to page 8
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1. ART Testing

All participants are required to take an ART test before arriving on campus. Please take a photo of your ART test result and be ready to present the photo to the lab technician on arrival. Only those tested negatives will be allowed to continue with the sessions. Each participant will be issued with 2 ART test kits.

2. Footwear Requirement

As you will be working in a workshop environment, it is mandatory that you wear closed-toe footwear at all times in the Fabrication Laboratory. The laboratory technicians will be turning away all participants who come in slippers, open sandals, etc.

3. Workshop Schedule

Each participant is expected to attend an online sharing via Zoom on 6 June from 9am to 10.10am, and attend two full day sessions within the 2-week period; one session per week. The full day session will be from 10am to 5pm. Each team to attend the workshop based on the assigned schedule as indicated in Table 3.

Table 1: Week 1 Schedule

Daily Schedule (week 1: 6 June to 10 June)	Activities	Remarks
9am – 10.10am	Sharing by DSTA Speaker: Mr Yeau Wenjie Introduction to Satellite Technology Speaker: Dr Luo Sha	Only on 6 June 2022 <u>ALL</u> participants to attend the online lecture via Zoom

	https://nus-sg.zoom.us/j/83449026567?pwd=L1FWODhmSkFQeDBTZXFwGjJlU3RTUT09 Meeting ID: 834 4902 6567 Passcode: 576549 Introduction to Hands-on Workshop	Participants who are starting their workshop on 6 June can proceed to NUS Engineering Fabrication Lab to attend the online sharing at 9am.
10.10am – 12pm	Introduction to CubeSat Kit Mechanical/Electronic Systems and Software	From 7 to 10 June, workshop will commence at 10am. Checking of listed components with guided hands-on session to set up the CubeSat's payload computer
12pm – 1pm	Lunch	Free and easy lunch at Engineering TechnoEdge canteen
1pm – 5pm	Assembly and testing of CubeSat kit	D-I-Y sessions with instruction manuals to put together the first iteration

Items to complete prior to week 2 activities.

1. Electronic set-up of the cube satellite
2. Mechanical assembly of the cube satellite

Table 2: Week 2 Schedule

Daily Schedule (week 2: 13 June to 17 June)	Activities	Remarks
10am – 12pm	Mass Properties MICG balancing of the Cube Satellite	A short introduction to mass properties and how they affect CubeSats in space. Participants to follow instruction manuals and carry out Mass Properties balancing to fulfil the mission requirements.
12pm – 1pm	Lunch	Free and easy lunch at Engineering TechnoEdge canteen
1pm – 4.30pm	Full system testing and demonstration	
4.30pm – 5pm	Participant sharing (5 mins per group) Closing and debrief	

Notes

- Teams are expected to finish the first iteration in class and will be allowed to bring back their CubeSat kit after the first session to make small refinements eg. change camera position, change electronic board position etc

Table 3: Assigned Schedule for Each Team

To attend the workshop on 6 June & 13 June (Group A)	To attend the workshop on 7 June & 14 June (Group B)	To attend the workshop on 8 June & 15 June (Group C)	To attend the workshop on 9 June & 16 June (Group D)	To attend the workshop on 10 June & 17 June (Group E)
8059_BLANK	SPACECRAZE	LVLH	THE_BOIZ	THE_CORTEX
WHATTHEHACK	UNFOLD	0EXP	BOHRING	DIGITALERA
AURORA	6K	ATHENSCREED	EVENTHORIZON	JJBUFFET
NUSBZA2019	T0X1C_V4P0R	POTATO	ORD	SPACEJAMMERS
CUBEVERSE	TACOTTON	ABS	CUBOID	COMMANDBLOCK
CODINGCOVID	KNIVES	APOLLO11	MATHGENIUS	BRAINSTERS
D4AUNT1355	CODEPIE	HFTM	DREAMERS	CITRINE
	OCTOPUS	CHICKENS	ASTROLITE	

4. Things to bring for the workshop (per team):

- Laptop running Windows 10 with administrator privileges
- USB cables (microUSB – USB) that support data transfer, minimum 1 cable but having more will be better
- 5V, 2A mobile phone charger, minimum 1 cable but having more will be better
- USB hub
- Mobile phone which supports Wi-Fi hotspot (android preferred)
- Download and look through user manual for a rough idea of what will happen during the physical workshop

5. Space Integrator Medals

Teams that exhibit active participation and perform well in this workshop will be awarded with a CubeSat Integrator Medal.

6. Map and Direction to go to the Fabrication Laboratory

URL : <https://cde.nus.edu.sg/idp/engineering-fabrication-laboratory/>

Address : E4-02-06 (Building E4, level 2, room 6)
9 Engineering Drive 1
Singapore 117575

Please start early from your home so that you can arrive at the venue 15 minutes before session starts. Session will start at the stipulated time because the schedule is very tight.

If you have difficulty finding your way, please contact **Mr Anuwar Shukor at 97805092 (Hp) or 66015588 (Office).**

Location Map of the Fabrication Lab at E4 :



There are several ways you can arrive at the venue and directions are given in the next 2 pages.

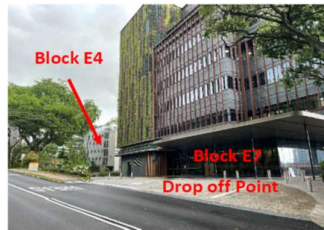
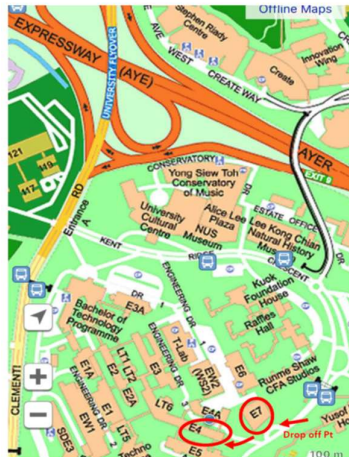
Notice from the map above that one of the closest building to E4 is building E7 where there is a nearby bus stop and also a drop off point.

- a) Arriving at the venue by public bus – drop off at bus stop near E7



b) Arriving at the venue by car drop off (ride hailing, or private car drop off)

Convenient point for drop off is at the lobby of E7 building as indicated below, then follow the instructions given here. The address for E7 building is 15 Kent Ridge Crescent.



- 1) Car drop off / pick up at Block E7
- 2) Walk towards Block E4 (downslope)
- 3) Use staircase to reach level 2 of Block E4.
- 4) Follow sign board to reach the workshop.

c) Driving in.

If driving into campus, please be prepared to pay NUS car park charges. Please park in front of the T-lab where there are visitor lots, marked in white. Then follow directions below.

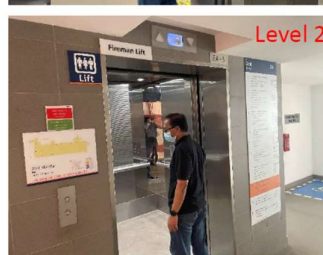
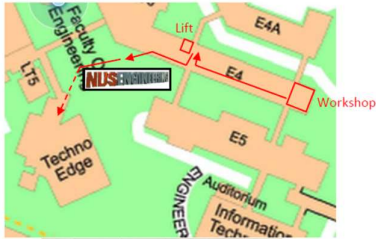
T-Lab



- 1) Enter NUS, College of Design and Engineering (CDE), via Clementi Road, Kent Ridge Crescent and Engineering Drive
- 2) Drive straight after passing the gantry and roundabout.
- 3) Park in the public carpark opposite T-Lab.
- 4) Walk (1-2 mins) towards Block E4A to the right.
- 5) Take a lift at Block E4A from Level 1 to Level 5.
- 6) Follow sign board to reach the workshop.

7. Map and Direction to go to the Engineering TechnoEdge Canteen

The TechnoEdge canteen is within the Engineering buildings and not far from E4. Follow the directions below to get there.



1) From Workshop, walk to the other end of the corridor to take a Lift

2) Take the lift (Level 2) to Level 4.
3) Turn right upon exit

4) Turn right upon reaching the junction.
5) Upon seeing the NUS Engineering Standing Signage, take the staircase behind it to reach Techno Edge.
6) Or follow sign board for a sheltered access.

Techno Edge Canteen

Food Court (Level 1)



Liho Tea (Level 2)



Bistro Box (Level 1)



Starbucks (Level 3)

8. NUS Guest Wi-Fi Login Guide

Step 1: Activate Wi-Fi connection in your phone and select ‘NUS_Guest’ network as shown in Figure 1A

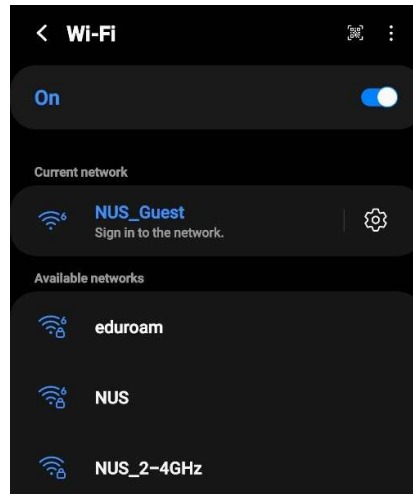


Figure 1A

Step 2: You will be prompted and directed to the sign-in window in order to use the NUS_Guest network. Click on ‘Event Login’ button as shown in **Figure 2A**

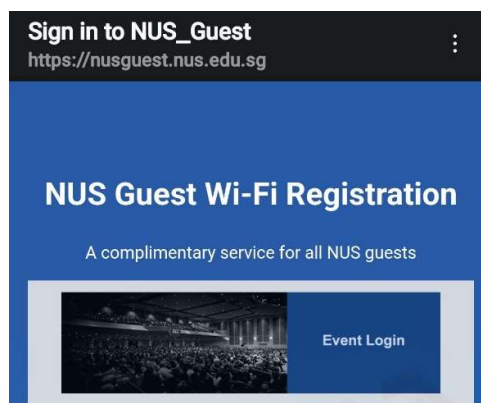
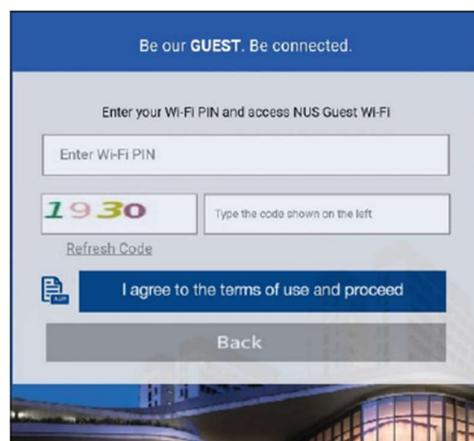


Figure 2A

Step 3: You will then be prompted to key in the password to the event. Enter ‘AGE4AZ’ in the Wi-Fi pin field and the generated captcha code as shown on your phone. Click on ‘I agree to the terms of use and proceed.’ You should be connected to the NUS_Guest Wi-Fi network thereafter.



9. Contact and Emergency Numbers

Names	Phone Numbers
A/Prof Loh Ai Poh	90469941
Mr Soh Eng Keng	93690983
Fire Emergency / Campus Security	6874 1616