

**Welcome to collab**

# About collab



Biotech

Medtech

Digital Health

**Our Mission:** collab aims to nurture and support the translational development of biomedical technologies in the areas of biotech, medtech and digital health.

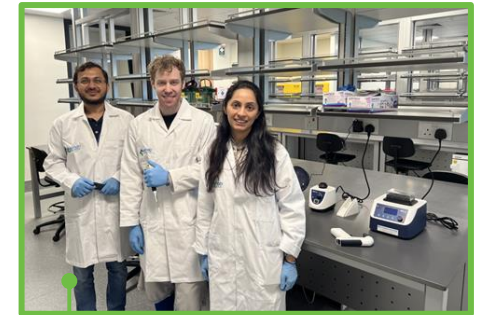


# Our Space

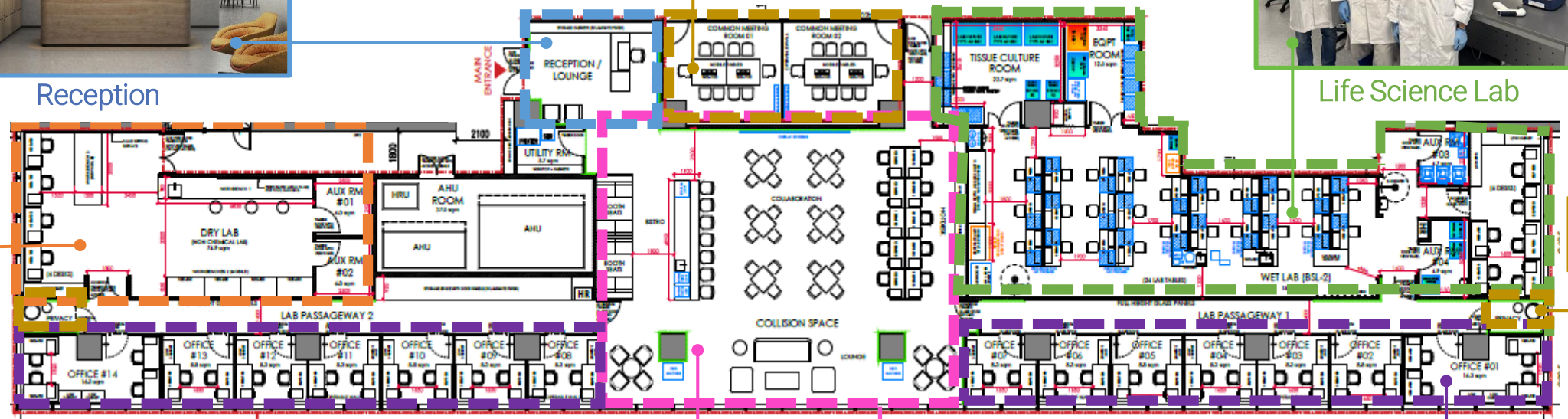


Reception

2 meeting rooms  
with removeable wall, modular tables  
(seminar style), video-conferencing system



Life Science Lab



Privacy Pods

Collaboration Space

Office Suites

\*Engineering Makerspace:  
jointly operated with  
SG Medtech Consortium  
(a consortium of >100 Medtech-  
related contract manufacturers,  
distributors, VCs)



# Our culture



**INNOVATION**  
**COLLABORATION**  
**GROWTH**



**MUTUAL SUPPORT**  
**SHARED SUCCESS**



**OPEN COMMUNICATION**  
**CONTINUOUS LEARNING**  
**ENTREPRENEURIAL SPIRIT**

# Our team



Executive  
Director

A/Prof Yen Choo



Deputy  
Director

Doreen Chai



Manager  
Programme

Syazana Puteri



Manager  
Operations &  
Finance

Huang Yinxi



Manager  
Safety &  
Facility

William Lim



Senior  
Executive

Rachel Chew

# General Admin



## Access cards

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- Lab/office space – 24/7 with lone working upon approval
- Hot desk - Entry hour is from 9am-6pm, weekdays only

## Mail and Delivery

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- co11ab address cannot be used as registered address with any statutory boards, regulatory authorities and agencies
- Mail – collected by co11ab; small delivery - Level 1 lobby
- Bulky delivery – service lift via Basement 1 loading bay

## Visitor policy

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- Register at the reception counter at Level 1 lobby
- Register via the Visitor Management System (VMS) prior to entry
- Schedule your guest visits between 9am and 6pm

## Wi-Fi

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- The administrator will email you the Wi-Fi password, do not share with others

## Meeting room

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- Rate: \$20/hr

## Printing

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- Rate: B/W - \$0.1/page; Colour - \$1.0/page

# Visitors to collab

All visitors entering collab are required to register via the Visitor Management System (VMS) prior to entry.

## 1. Scan this QR code as shown below



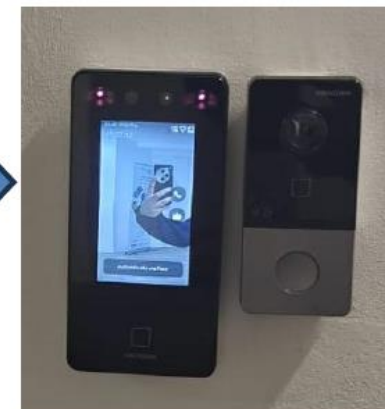
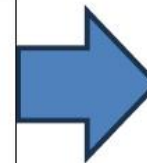
## 2. Compulsory fields that must be filled in:

- Visitor First Name
- Visitor Email
- Visitor Company
- Host Company
- Host First Name
- Verification code (case sensitive)

3. Upon submission, a QR code will be generated immediately and will also be sent to your email.

4. Please use the QR code to scan at the illuminated access panel at the door.

Please face the QR code generated towards the lighted screen.



# Member Page

<https://www.co11ab.sg>

### Members Login

Log In

Username or Email Address

Password

[LOG IN](#)

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[LOST PASSWORD?](#)

## Administrative matters

[NTU Facilities](#)

[A\\*STAR Facilities](#)

[Change Password](#)

## Administrative matters

Please contact us if there is any enquiry.



collab handbook



Clearrooms booking system



Orientation briefing slides



Visitor Management System (VMS) User Guide



Printer setup instructions



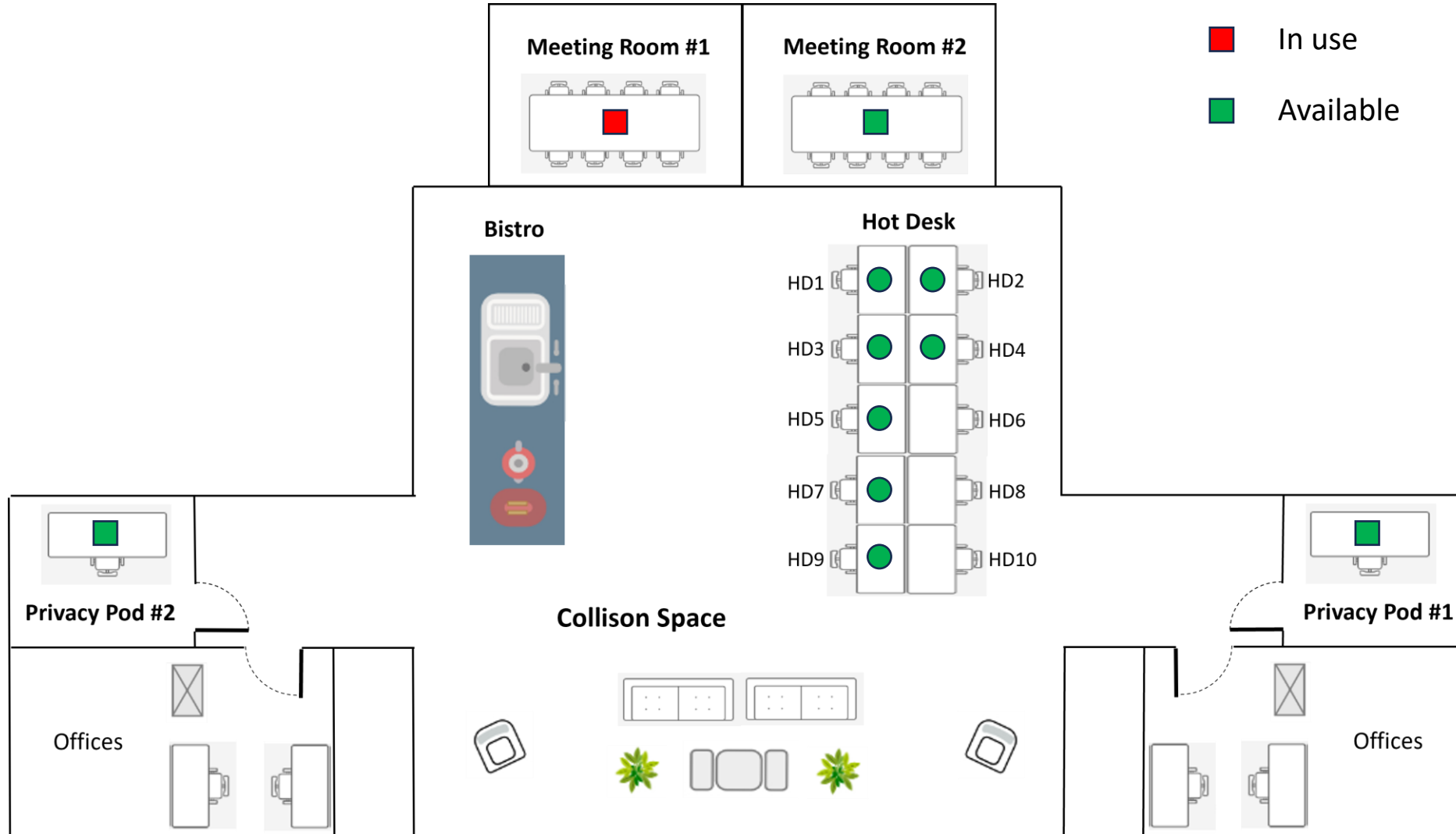
Life Science Lab equipment list

# Booking System

## Booking System and Ethics



# Booking System



# Facilities & Services

## Shared Facilities

- collab facilities
- NTU/LKC facilities
- A\*STAR facilities

## Networking

- Regular events, seminars, and workshops

## Admin Support

- Reception Services
- Lab services

## Program

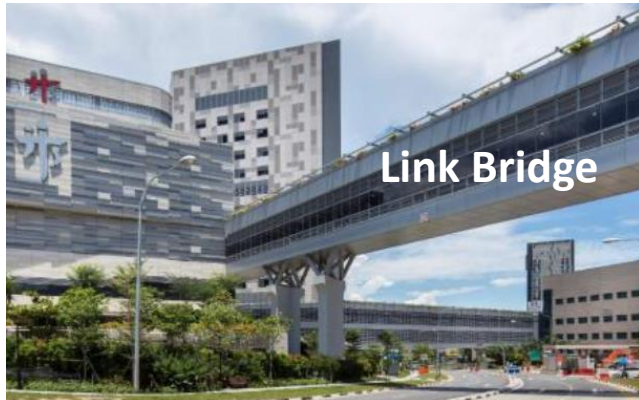
- In-house Experts-In-Residence (Law, IP, regulatory, finance, investment, etc.)

# Directions to collab



\*Parking tickets

# LinkBridge Door Access



## Link Bridge Operating Hours

Access to the Level 5 Link Bridge is restricted to the following timings:

**Monday to Friday : 7:00 AM – 8:00 PM**

**Saturday : 7:00 AM – 1:00 PM**

Sunday & Public Holidays: **Closed**

Outside of these hours, the link bridge doors will be secured and access will not be available.

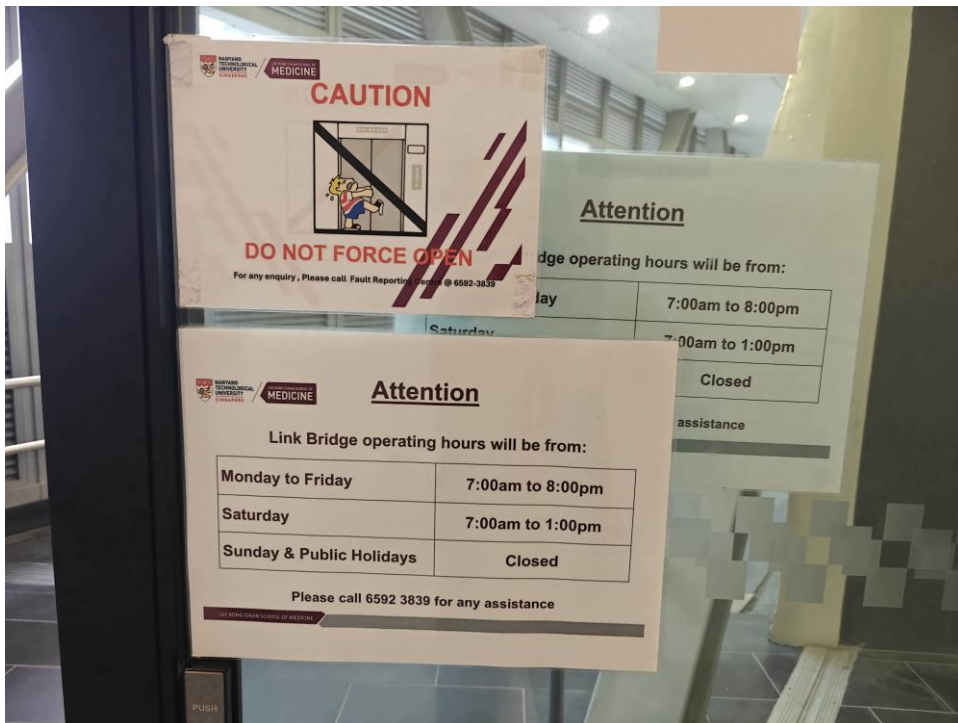
## Reporting & Assistance

If you encounter any issues with door access, **please do not attempt to force entry.**

Kindly report the issue to:

 **Fault Reporting Centre: 6592 3839**

(The contact number is also displayed at the link bridge door for your convenience.)



# Nearby Amenties

## Supply & Demand – CSB building Level 1

**B1 Foodcourt @ CHI – CSB building Level 5**  
→ CHI, take lift to B1

## TTSH-Novena Direction

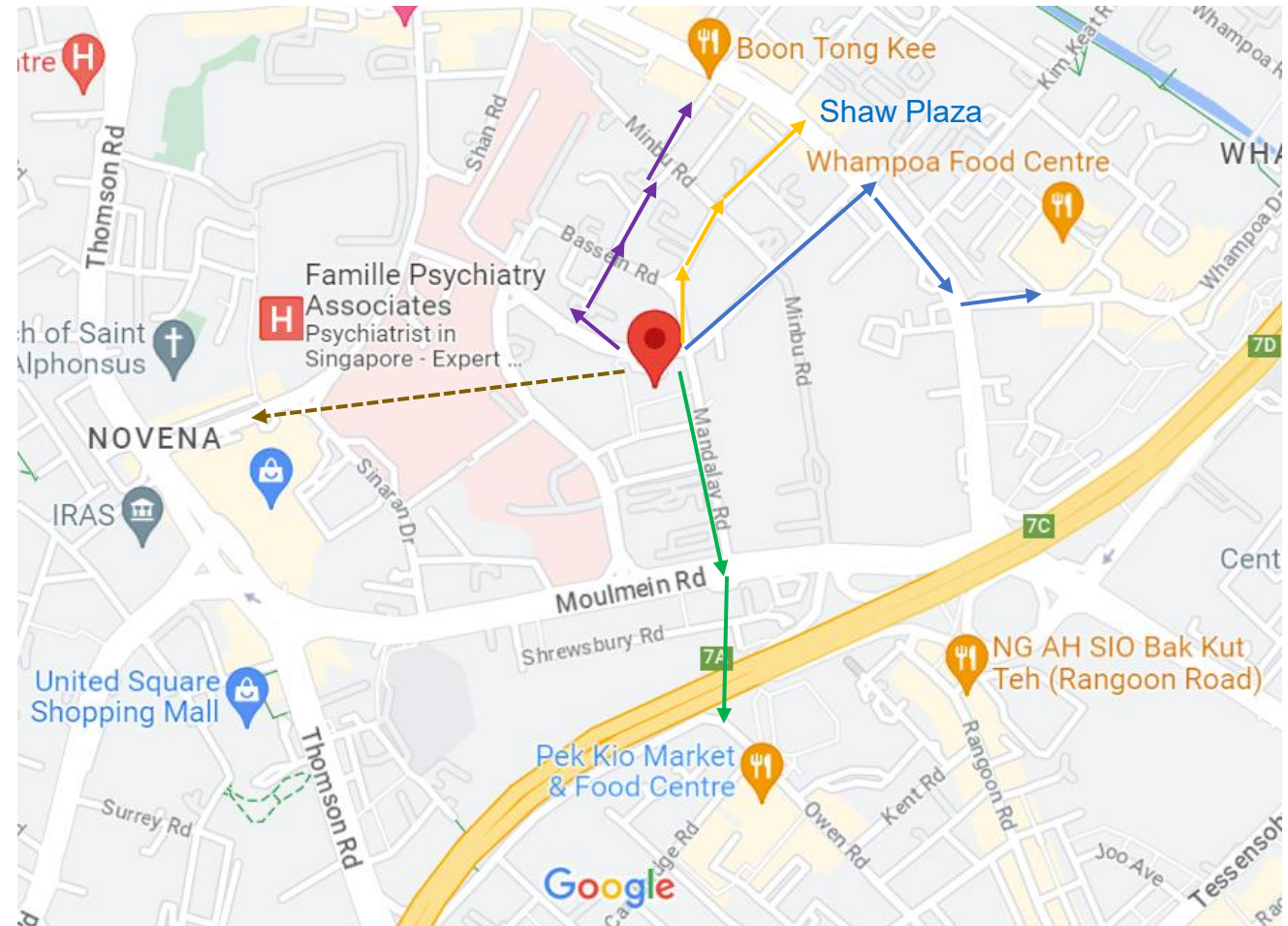
- TTSH Kopitiam, etc.
- Square 2 & Velocity

## Balestier Road Direction

- Balestier Food Centre
- Shaw Plaza
- Whampoa Food Centre

## NSC Direction

- Pek Kio Market & Food Centre



# Housekeeping



**Respect others**



**Cleanliness**



**Noise Levels**



**Privacy**



# Housekeeping rules



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**Waste Disposal:** Dispose of your waste and clear up any mess. Return items taken from co11ab to their original position or location. Cleaners will empty the trash bins every weekday, except for locked offices.

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**Dishwashing:** Rinse your used cups and put them in the dishwasher. The coffee machine and cups will be cleaned after 5 PM every weekday.

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**Food Storage:** Label your food before storing it in the fridge. Food without a label is considered for sharing. Discard expired food promptly.

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**Microwave Oven:** Please use the microwave oven in the Staff Lounge on level 7. Do not use the microwave oven in the Life Science Lab for food.

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**After-Meal Etiquette:** Wipe down the table or counters after your meal.

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**Locker Usage:** Lockers are available for daily hot desk usage and must be cleared at the end of the day.

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**Personal Belongings:** Keep personal belongings organized within your workspace. Avoid cluttering shared areas.

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**Equipment Usage:** Report any malfunctions to co11ab staff immediately. Do not attempt to repair it yourself.

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**Security:** Do not share your access card or codes with others. Report lost or stolen access cards immediately.

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**Office Suite:** Keep the office glass free of any decorations, posters, and curtains. Lock your office and turn off the lights when you are not around.

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**Meeting room:** Pack up and clear up any mess before your time ends and turn off the light when you leave.

# Contact Us




## Contact Persons:


Dr Huang Yinxi  
Manager  
Operations & Finance  
[yinxi.huang@ntu.edu.sg](mailto:yinxi.huang@ntu.edu.sg)

William Lim  
Manager  
Safety & Facilities  
[william.limct@ntu.edu.sg](mailto:william.limct@ntu.edu.sg)


 [www.co11ab.sg](http://www.co11ab.sg)

 [contact@co11ab.sg](mailto:contact@co11ab.sg)

 (65) 6592 1794  
(65) 9693 3790

 Level 16, Clinical Sciences Building,  
LKC Medicine, 11 Mandalay Road,  
Singapore 308232

## Our Social Media:

 LinkedIn : co11ab Novena



**Thank You**

# New Members onboarding Safety Briefing by William Lim



Manager, Safety and Facilities

Updated 10 Dec 2025



# What is Safety to you?

So that YOU can go home safe  
everyday...

- Important component with legal implications
- Ministry of Manpower (MOM)
- Ministry of Health (MOH)
- Singapore Police Force (SPF)
- Singapore Civil Defence Force (SCDF), etc



# Individual Safety Responsibilities



# MOM Workplace Safety & Health Act

<http://www.mom.gov.sg>

Covers all workplaces, of various risk levels and industries, and all stakeholders from Sep 2011.

Assigns legal responsibility to all **stakeholders** who have control over safety and health risks.



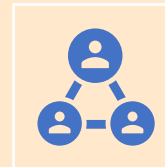
MINISTRY OF  
MANPOWER



WSHCOUNCIL



**Occupiers** – Physical workplace, means of access and egress and any machinery, equipment, etc.



**Employers** (including self-employed) – Safe work processes Group Leaders, Managers, Supervisors – Responsible for ensuring safe work processes within their care (line management responsibility)



**Employees** (Persons at work) – Cooperate with employers and not endanger the safety and health of others

# Risk Assessment in the workplace

From MOM WSH Act 2006

## ***What is Risk Assessment?***

- Identification: Recognizing potential hazards that could cause harm.
- Evaluation: Analyzing the likelihood and impact of these hazards.
- Control: Implementing measures to minimize or eliminate risks.

## ***Importance of Risk Assessment***

- Safety: Ensures a safe working environment for employees.
- Compliance: Meets legal and regulatory requirements.
- Prevention: Reduces the likelihood of accidents and incidents.
- Cost Savings: Prevents financial losses due to workplace injuries and illnesses.
- Reputation: Enhances the company's reputation as a safe and responsible employer.



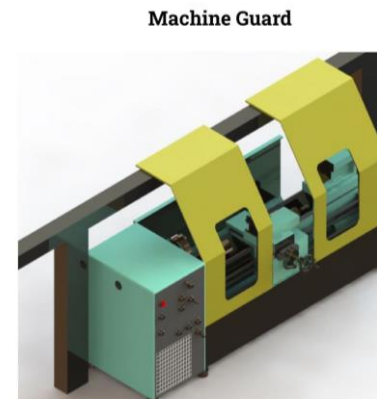
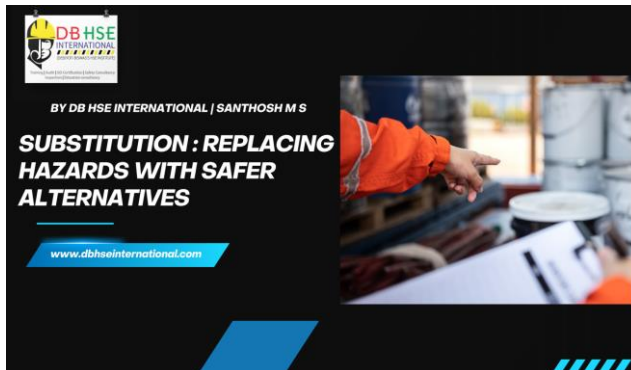
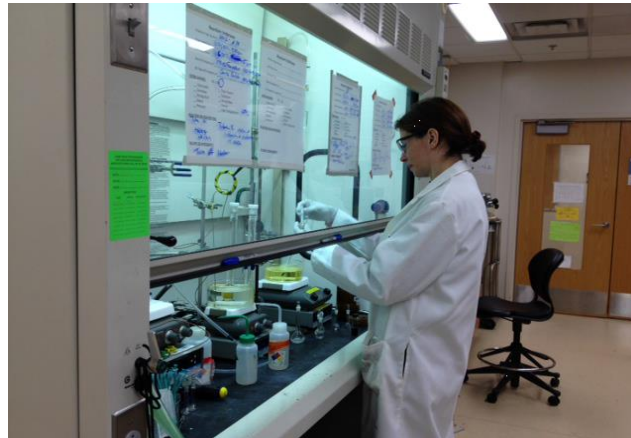


# Risk Assessment

From MOM WSH Act  
2006

## E-S-E-A-P

Eliminate → Substitute → Engineer → Administrative → PPE



# Risk Assessment

From MOM WSH Act 2006



**Group Leaders, Managers, Supervisors** to ensure risk assessments are conducted and approved for all work activities before commencement of work

## What is the Take 5 process?

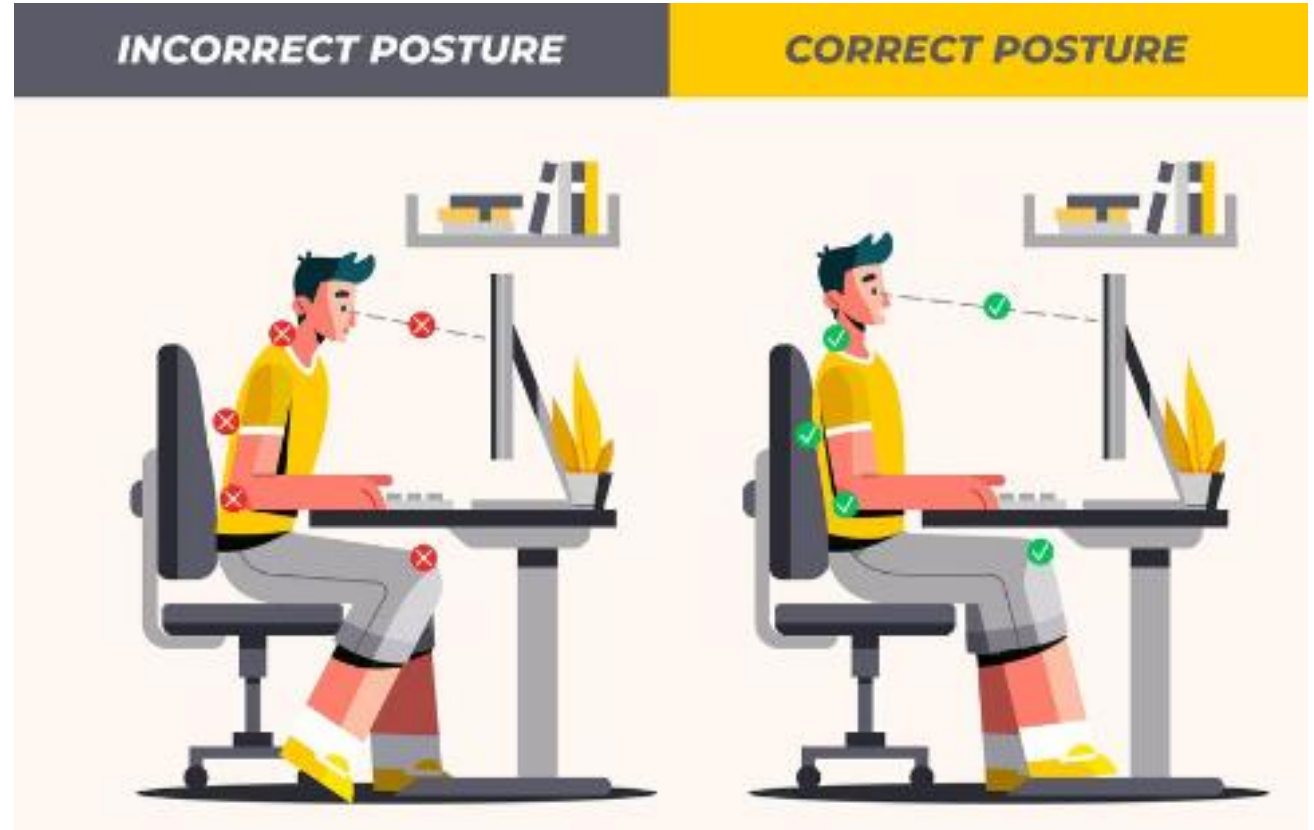
-  **1** Stop and Look
-  **2** Think through the Task
-  **3** Identify Hazards
-  **4** Control + Communicate
-  **5** Do the Activity Safely

# Office Ergonomics

L K C Office RA Working in front of comp

## Workstation Setup:

- Adjust chair height so feet rest flat on the floor.
- Keep monitor at eye level, about an arm's length away.
- Use ergonomic keyboards and mousepads if possible.



# Office Ergonomics

L K C Office R A

- **Healthy Office Habits**
- **Movement & Posture:**
  - Take breaks every 30 minutes; stand or walk around.
  - Practice good posture: back supported, arms at 90 degrees.
  - Stretch regularly to reduce strain.



# Manual Lifting

LKC Office RA (Manual Lifting)

Assess the load (weight, stability, sharp edges).

Stand close to the load, feet shoulder-width apart.

Bend your knees, keep back straight, and lift using your legs.



# Important Office Risk Assessments



- Sorting of Documents
- Punching holes
- Filing of documents
- Use of Staplers
- Retrieval of files from shelves
- Use of Photocopier
- Outreach programs
- Food Setup
- Consumption of Food
- Use of Paper Shredder
- Use of Cutters and paper blades
- Use of Electrical Equipment
- Use of Hot water dispenser
- **Intruders**
- **Visitors, contractors , collaborators**
- **Non routine activities like repair works**
- Working in office
- Working in office during Pandemic

# Slip, Trip and Fall

## Common causes and Safety Prevention Tips

### Causes of Slips & Trips

### Potential Outcomes:

- Injuries ranging from minor bruises to fractures.

### Preventing Slips, Trips and Falls

### Reporting:

- Notify Safety and Facility Manager of any hazards (e.g., broken tiles).



### Preventing Slips, Trips & Falls

**Know The Risks**  
Slips and trips are two of the most frequent causes of injury in the workplace and cost employers millions every year. However, the majority of accidents caused by slips and trips can be easily avoided by following a few simple guidelines. By following the principles set out in this poster, you can ensure that your workplace is free from slip and trip hazards and that accidents are kept to a minimum.

**1. Hazard - Spillages**  
**Spillages**  
Clean spills up at once. Remember that the cleaning agent needed will depend on the nature of the spill. If the floor remains wet after the spill has been cleaned, make sure people are aware of this by using appropriate signs. Arrange a diverted route that avoids the area if necessary.

**2. Hazard - Cables**  
**Cables**  
Try to make sure that cables do not cross walkways. Use cable curbs and tunnels to prevent trips if necessary.

**3. Hazard - Obstructions**  
**Obstructions**  
Permanent obstructions and any objects left lying around can easily create a trip hazard if they are not seen. Keep work areas clear of obstructions. If this is not possible, use appropriate signs or barriers to make people aware of hazards.

**4. Hazard - Flooring**  
**Flooring**  
Look for any cracks, holes or uneven wear etc that may cause a trip hazard. If the floor regularly becomes wet or slippery through working procedures, consider how this can be contained or prevented.

**5. Hazard - Footwear**  
**Footwear**  
Choice of footwear can be crucial in preventing slips and trips. If special footwear is needed to ensure the safety of employees, the employer must provide it.

**6. Hazard - Lighting**  
**Lighting**  
Lighting should be adequate enough to enable people to see obstructions and hazards. Ensure that faulty lights are replaced and dirty lights are cleaned before levels become too low for people to work in safety.

**7. Preventing Accidents**  
An effective management system will enable you to:  
• Ascertain any slip and trip problems.  
• Identify the best course of action.  
• Execute your chosen course of action.  
• Evaluate the effectiveness of your precautions.  
You should try to incorporate the following steps into your system:  
1. Ask which areas of your workplace contain slip and trip hazards and devise a strategy for improvement. Minimise slip and trip hazards through effective equipment and working procedures.  
2. Make sure workers are aware of slip and trip risks and are committed to minimising them. Give people safety responsibilities. Ensure a record is kept of who is responsible for what.  
3. Carry out regular checks to ensure that any safety procedures are being carried out properly. Keep a record of cleaning and maintenance work.  
4. Review the approach to slip and trip issues on a regular basis and examine accident reports.

© Safety First Aid Group Ltd 2016  
The information contained in this poster is for guidance only and should not be used as a substitute for recognised training.  
A14 (REV 10/15)

# Electrical Safety

## Safety Prevention Tips

### Safety Prevention Tips:

- Use authorized and approved adaptors and plugs with Safety Mark Only
- **No Overloading:** Do not daisy-chain power strips or overload sockets.

Notify the Safety and Facility Manager of any hazards or when in doubt.



Use of authorized adaptors and plugs with Safety Mark only



Do not overload power outlets



No daisy-chaining

**LOOK. THINK. DO.**  
Look out for danger. Think of how you can protect yourself. Do your work safely.

### 6 Basic Workplace Safety and Health (WSH) Rules for Use of Electrical Equipment

Overloading power points, improper earthing and wet surroundings can cause serious injuries and even death to workers. **Every year, 2 workers die and 23 workers are injured from exposure to electric current.** Do your risk assessment before starting work.

<b>Report to your supervisor if you feel unwell.</b> 	<b>Ensure correct wiring and proper earthing.*</b> 
<b>Make sure equipment is in good condition before use.</b> 	<b>Do not overload power sockets.</b> 
<b>Dry your hands before touching equipment.</b> 	<b>Use the right personal protective equipment.</b> 

Learn more from Energy Market Authority's Guide on Electrical Safety at <http://elise.ema.gov.sg>.  
\*L: live wire, N: neutral wire, ⊕: earth wire



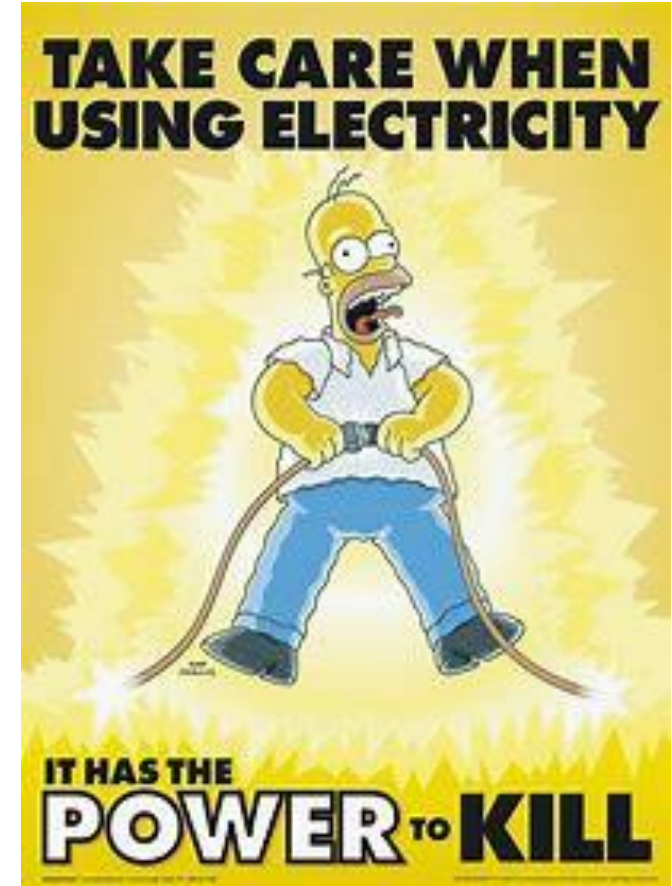
Prevent all injuries. *Go home safe and healthy.* VISION ZERO

# Electrical Safety

## Quiz on Electrical Hazards

*Which of the following are electrical hazards?*

- (a) Foreign objects in socket instead of using proper adaptors
- (b) Overloading of power points
- (c) Using Travel or universal adaptors
- (d) Power supplies and connections in contact with water
- (e) **All the above**





**FIRE ESCAPE  
PLAN 2026  
co11ab**

# Fire Safety

## Preventive Measures and What to do

### Preventative Measures:

- Keep flammable materials away from heat sources.
- Do not overload electrical sockets.
- Report faulty electrical equipment to Safety and Facility Manager.

### In Case of Fire:

- Sound the alarm.
- Evacuate immediately using designated exits (do not use elevators).
- Assist others and follow instructions from fire wardens.



# Fire Evacuation Procedures

Two stage alarm system

## a) First Stage Alarm

When fire alarm is activated, alarm bells on all floors shall ring for 1 minute before it is isolated. A general alert announcement will then be broadcasted over the Public Address System by the building management.

## b) Second Stage Alarm

Upon confirmation of a fire situation, the evacuation announcement shall be made via Public Address System and the 2<sup>nd</sup> continuous alarm will be activated on all floors and the total evacuation will begin.

## c) Evacuation & assembly

Assemble at the assembly area in the open area behind Amnios. Fire wardens and CERT members will perform a roll call.



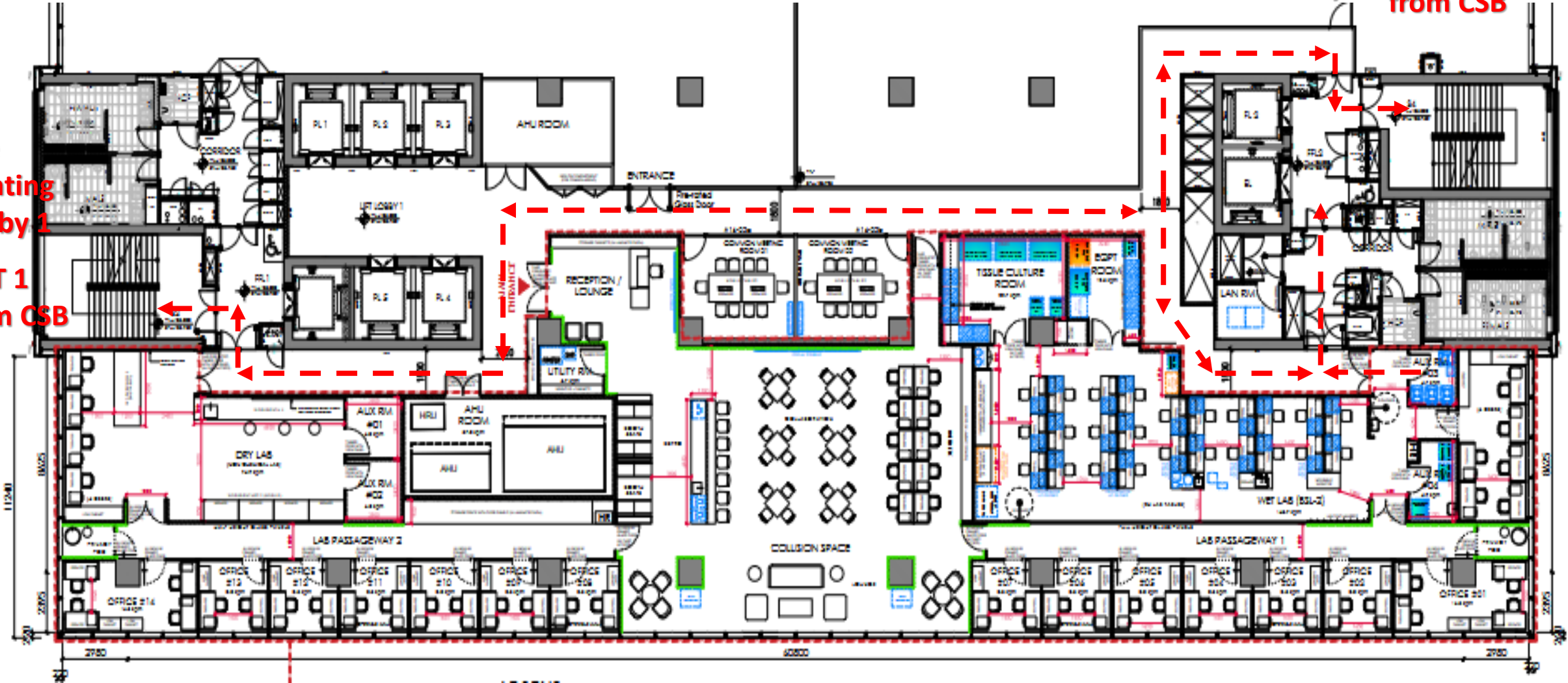
# FIRE EVACUATION PLAN 2026

Note: CSB is Clinical Sciences Building, 11 Mandalay Road



Fire Fighting Lobby 2  
EXIT 2 from CSB

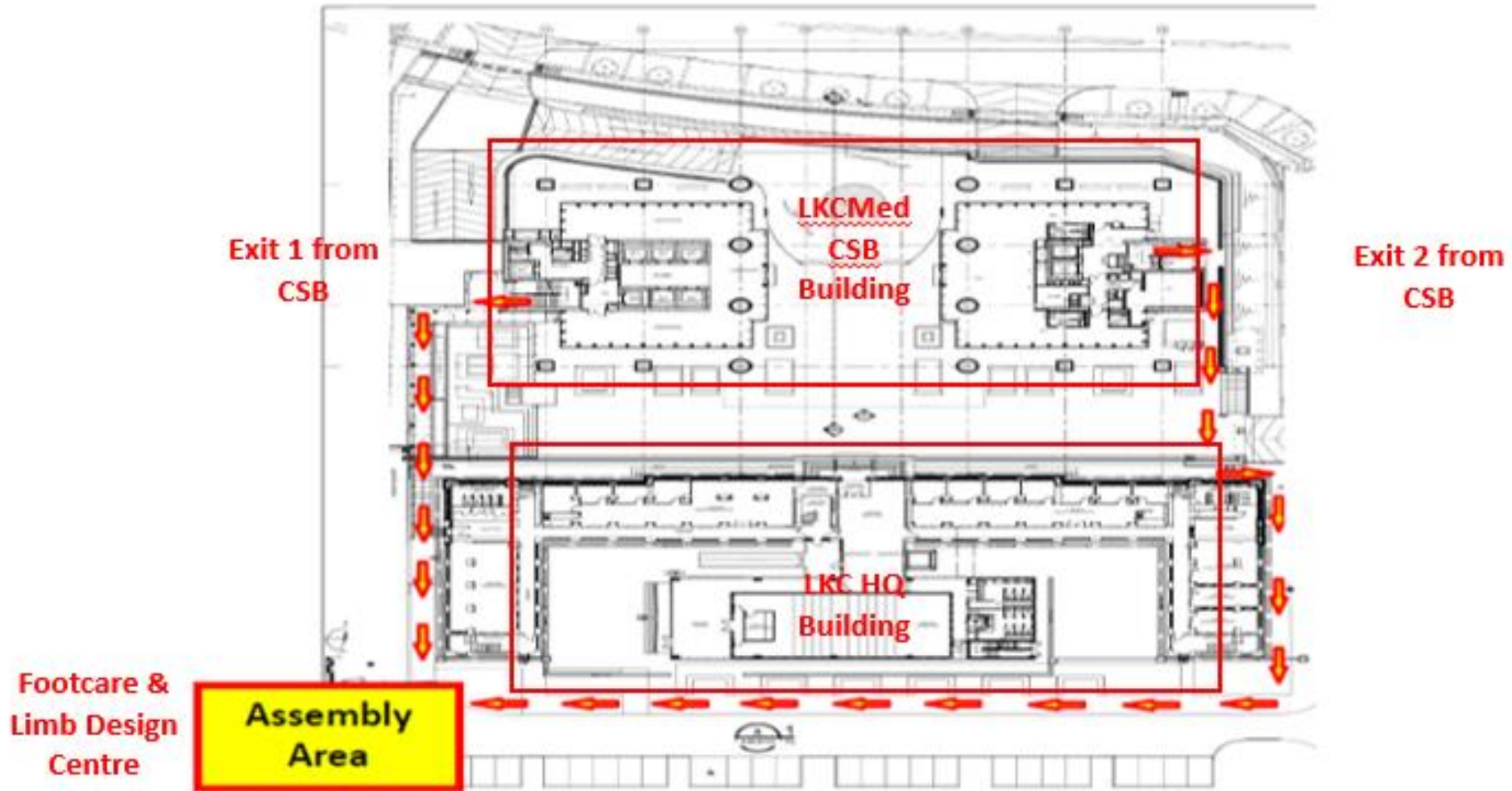
Fire Fighting Lobby 1  
EXIT 1 from CSB



# Evacuation Routes

CSB Exit Evacuation Routes to Assembly Area

Note: CSB is Clinical Sciences Building, 11 Mandalay Road



# Key Safety Personnel in co11ab

**Safety and Facilities Manager**  
**Fire warden**

Mr William Lim  
96933790  
Dr Huang Yinxi

**First Aider**

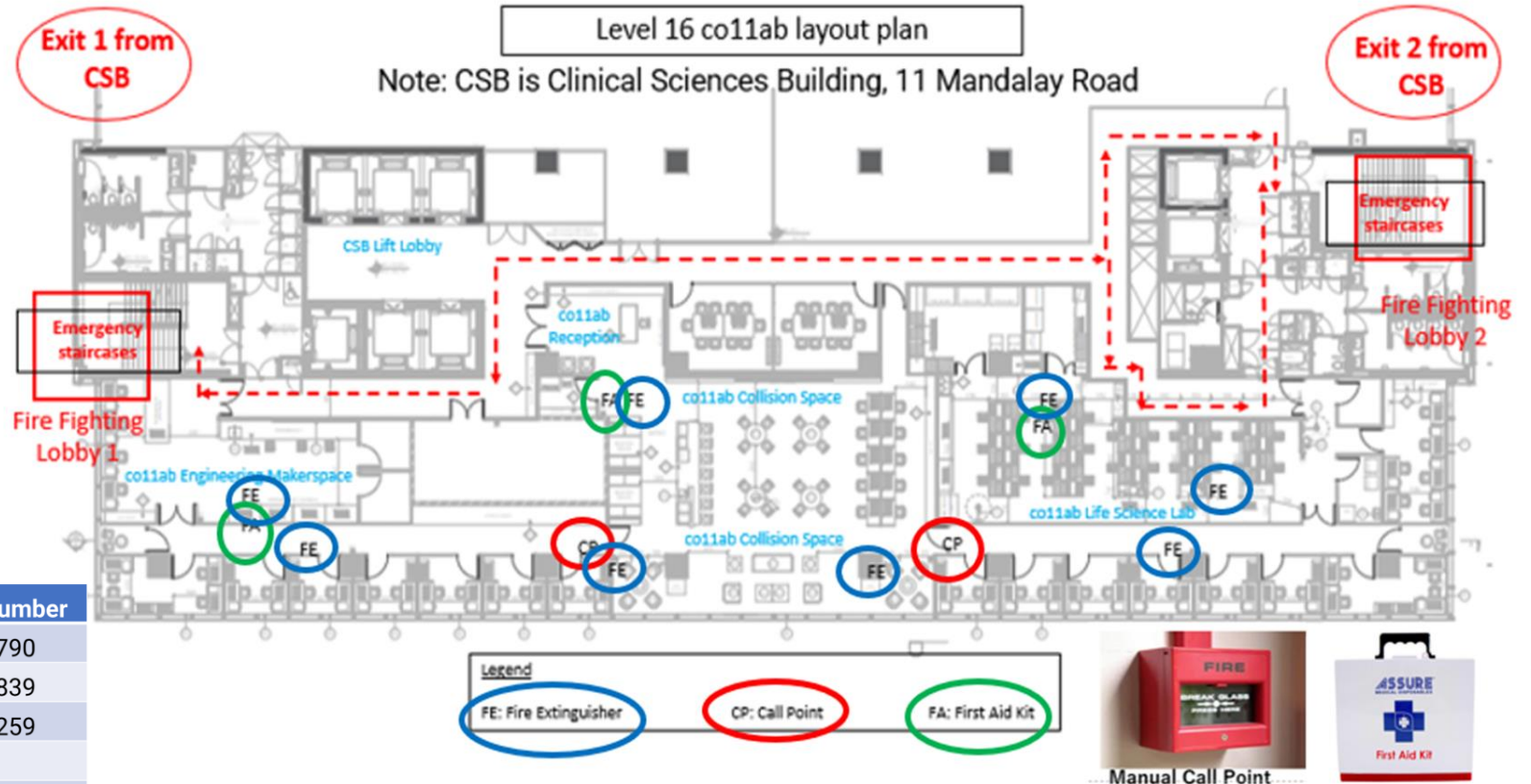
William Lim

Emergency Contacts	Contact Number
co11ab Safety and Facilities Manager	9693 3790
CSB Emergency Helpline Number	6592 3839
CSB Fire Command Centre	6262 4259
Fire / SCDF/ Ambulance	995
Police	999
Non-Emergency Ambulance Service	1777
Tan Tock Seng Hospital	6537 8754

# Evacuation Routes



Exiting from collab premises to CSB Fire Fighting Lobby

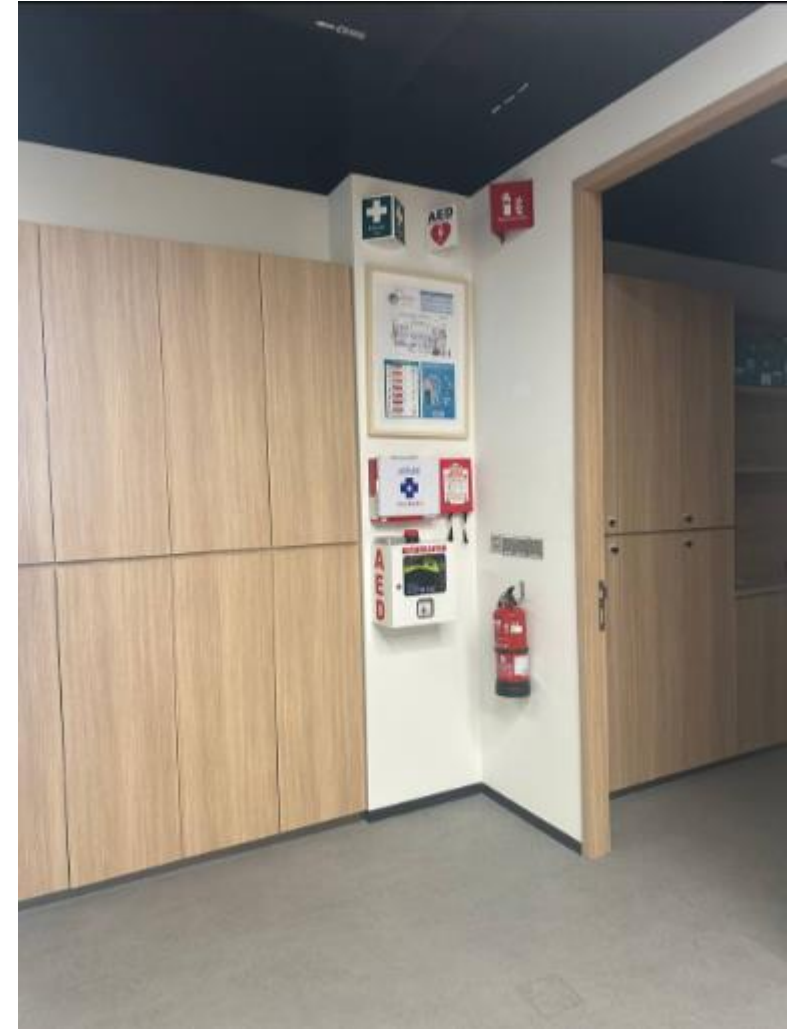


# FIRST AID AND AED Locations

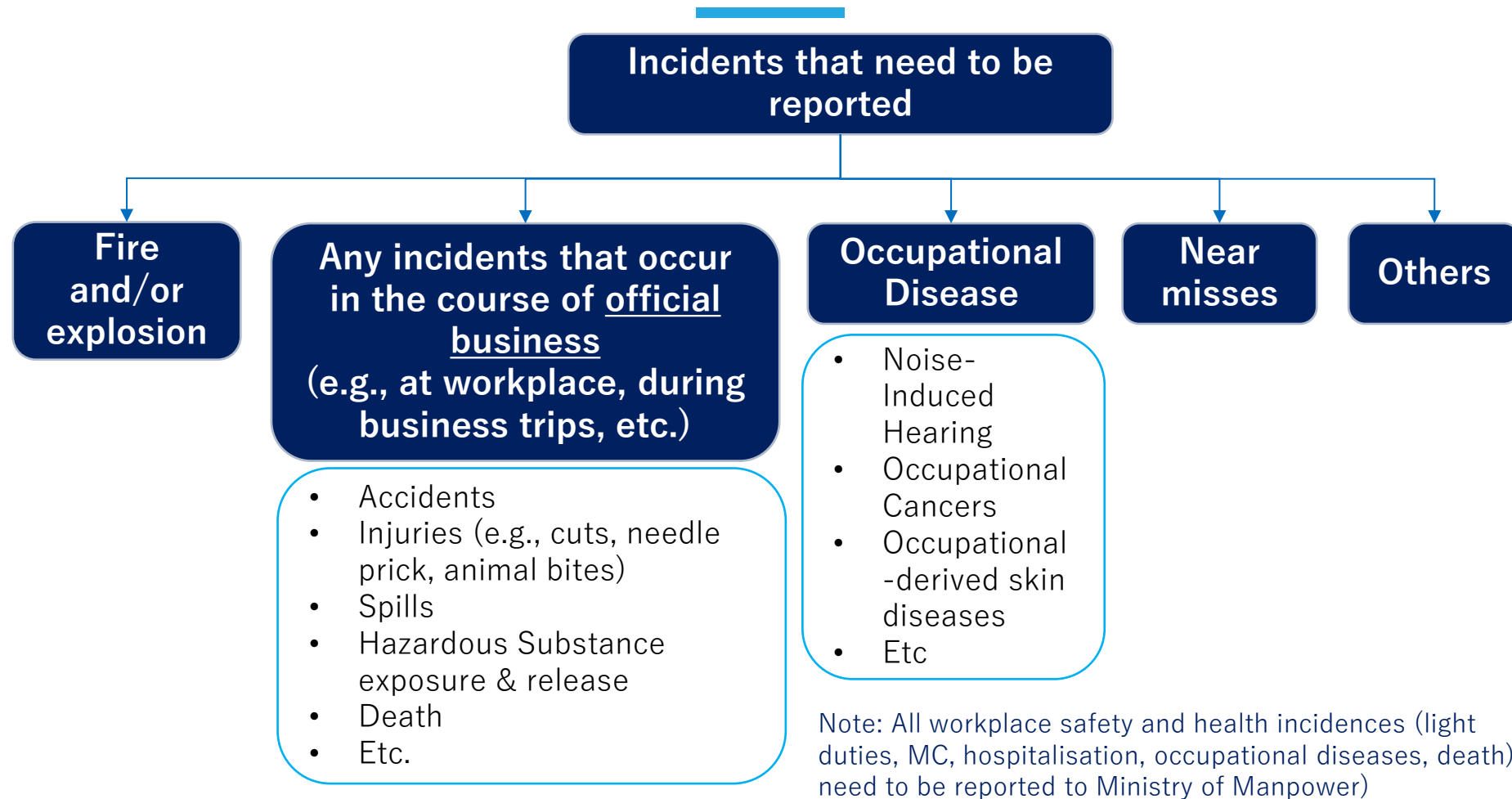
Automated External Defibrillator

## Clinical Sciences Building (CSB)

- Level 16 (inside co11ab)
- Level 1 Lobby (behind security Kiosk)
- Many other AEDs available in this LKC Medicine / CSB building.
- We have a team of trained First Aiders scattered the various floors of CSB.



# Reportable Incidents



***Please seek immediate medical attention for all injuries involving biological materials and/or hazardous substances exposure!***

# Reportable Incidents

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What is the purpose of reporting accident / incident to supervisor and safety officer?

- I. So that measures can be implemented to prevent occurrence of similar accident / incident.
- II. So that disciplinary action can be taken against the injured person.
- III. Legal requirements.

- (a) I, II and III
- (b) I only
- (c) II only
- (d) I and III

# Lone Working Policy



Those working in the laboratories beyond office hours

- co11ab has established **Guidelines on Lone Working SOP** for those working in labs.
- Anyone intends to work alone in lab after normal working hours on weekdays (9:00 am to 6:00 pm), weekends and public holidays.
- **Seek approval for lone working for from the supervisors.**
- **Submit completed Risk Assessment form and LKCMedicine Lone Working Application Form to co11ab Safety and Facilities Operation Manager, William**



## REQUEST FOR CONSENT TO LONE WORK

APPENDIX B

1. Applicants' Department/ Lab: \_\_\_\_\_
2. Applicant Name/s: \_\_\_\_\_
3. Employee ID (Staff) / Student ID (PhD): \_\_\_\_\_
4. Supervisor Name: \_\_\_\_\_
5. Location of Lone Work (Building/ Level/ Room) : \_\_\_\_\_
6. Lone Working Activity Description & Justification for Lone Working:  
\_\_\_\_\_  
\_\_\_\_\_
7. Lone Working Request from: \_\_\_\_\_ to \_\_\_\_\_.
8. Risk Assessment related to the Lone work (please indicate RA reference ID/s below and attach the RAs to the lone work form – PDF the RA from WRAS).  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
9. Safety Induction Completed (Date): \_\_\_\_\_
10. Declaration by lone worker/s:  
By submitting this request, I/ We confirm that I/we:
  - Have disclosed any relevant medical conditions or vulnerability that would increase the risks of working alone.
  - Informed the supervisor of the timescale of the work.
  - Am/ Are aware of the relevant emergency phone numbers and procedures of the campus, I/ We shall be working at
  - Have read the project/ procedural risk assessments and relevant SOPs.
11. Declaration by the Principal Investigator (PI)  
 I have looked through the risk assessments and approve this lone work in full knowledge and awareness of the associated risks.

PI Signature/ Date: \_\_\_\_\_

# Emergency Safety Contacts



Agency	Contact Number
co11ab Safety and Facility Manager	9693 3790
CSB Emergency Helpline Number	6592 3839
CSB Fire Command Centre	6262 4259
Fire / SCDF/ Ambulance	995
Police	999
Non-Emergency Ambulance Service	1777
Tan Tock Seng Hospital	6537 8754



# End of Part 1

**For those taking space at the life science lab,  
there will be additional 20 more slides.**

# Life Science Laboratory Safety

Content for Laboratory Safety Rules



- a) Mandatory NTU eLearning modules to attend
- b) Lone Working Policy
- c) Documents to Prep for Lab
- d) Laboratory Safety Lab Rules
- e) Equipment Safety
- f) Chemical Safety
- g) Biological safety
- h) Laboratory Spills
- i) Sharps
- j) Disposal of Waste
- k) Conclusion

# Mandatory eLearning modules



collab is operational under NTU LKCMedicine

Abide the safety requirement set by LKCMedicine Health and Safety Team (H&S)

## eLearning Modules to complete using NTU Associate Account

### a. Risk Management (2 Modules)

Core Module and Workplace

### b. Biosafety Training Course (2 modules)

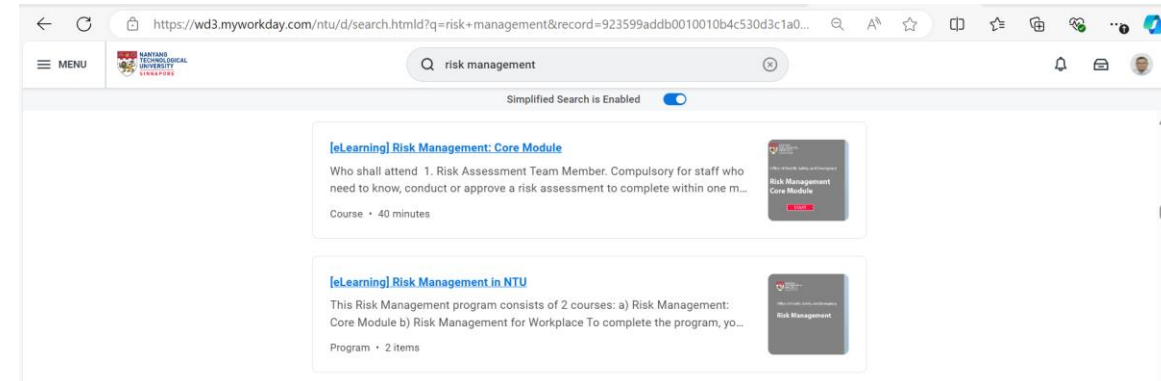
Basic Module 1 and Module 2

### c. Chemical Safety Training (4 modules)

Introduction to Chemical Hazards, Working with hazardous chemicals, Managing Chemical Hazards and Understanding Signage from SS508

### d. LKC-062 Spill response training (1 module)

e-learning for lone work, hands-on for if working with agents\*





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  - Have read the project/ procedural risk assessments and relevant SOPs.
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 I have looked through the risk assessments and approve this lone work in full knowledge and awareness of the associated risks.

PI Signature/ Date: \_\_\_\_\_

# Co11ab Life Science Laboratory – Mandatory Compliance Requirements

## 1. Risk Assessments (RA)

- All laboratory activities must have **approved Risk Assessments** before work begins.
- RAs must be kept updated and resubmitted whenever there are **changes to processes, equipment, or hazards**.

## 2. Work Instructions / Standard Operating Procedures (SOPs)

- Submit **Work Instructions (WI)** or **SOPs** for all procedures carried out in the Life Science Lab.
- Ensure all WIs/SOPs align with the corresponding Risk Assessments.

# Co11ab Life Science Laboratory – Mandatory Compliance Requirements

## Chemical Management Requirements

### 3. Chemical Inventory

- Maintain an up-to-date chemical inventory at all times.
- Inventory must be **submitted to the co11ab Safety Manager every 3 months**, even if **no changes** occurred.
- For any **sudden increase**, new chemicals purchased, or quantity changes, **inform the Safety Manager immediately**.

### 4. Chemical Safety Data Sheets (SDS / MSDS)

- SDS/MSDS must be available for every chemical used or stored.
- Keep them accessible for audits and emergency reference.

### 5. Chemical Solvent Waste Volume

- Report the **monthly volume of chemical solvent waste** generated.

# Co11ab Life Science Laboratory – Mandatory Compliance Requirements

## Biological Materials Management

### 6. Biologicals Inventory

- Maintain an updated inventory of all biological agents, samples, and materials.
- Submit the biological inventory **every 3 months**, even if **no changes** occurred.
- Report any **new biologicals** or sudden increases **immediately**.

### 7. Biological Safety Data Sheets (B-SDS / MSDS)

- Ensure Safety Data Sheets for all biological materials are kept and updated.

### 8. Immunisation Audit – Declaration Form

- All relevant personnel must submit the **Immunisation Audit Declaration Form**, following the immunisation grid requirements.

# Co11ab Life Science Laboratory – Mandatory Compliance Requirements

## Training Compliance

### 9. Online Safety Modules Completion

- All required online modules must be completed **before starting work** in the Life Science Lab.
- Personnel must **submit a screenshot** as proof of completion to the Safety Manager.

# Laboratory Safety Rules

- a) Only **authorised persons** are allowed to enter the lab.
- b) Personal Protective Equipment (PPE) must be worn upon entering lab and taken off when exiting the lab.
- c) Use all the equipment, products & chemicals for their intended purposes only.
- d) For unattended operations or faulty equipment, post a notice on the equipment to inform others.
- e) Practice good Housekeeping
- f) Keep workplaces clean. Clean any spills immediately.



# Laboratory Safety Rules

***PLEASE CHECK WITH THE SAFETY AND FACILITIES MANAGER IF YOU ARE NOT SURE!!  
PLEASE CHECK BEFORE CARRYING OUT ANY PROCEDURES !***



# Basic PPEs

- **Long pants/jeans and covered shoes leaving no parts of feet/legs exposed**

- **Laboratory Coats**

Lab Coat is used to protect street clothing against biological or chemical spills as well as to provide some additional body protection

- **Face Shields and Eye Protection (Safety Glasses)**

Face shields and glasses should be worn whenever procedures with high potential for creating aerosols or splashing are conducted.

- **Gloves**

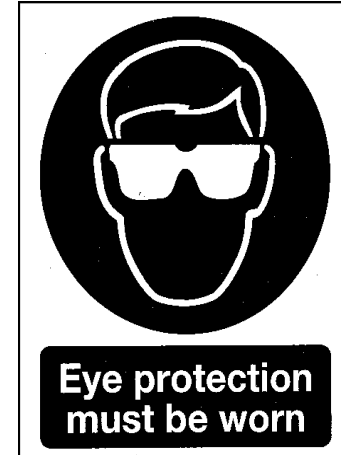
Gloves are worn in labs when skin contact with chemicals, hazardous substances and biological substances.



# Additional PPEs

Additional eye/face protection, (e.g. goggles, face shields, etc.) must be worn as required

- Performing procedures that may cause splashes ( Chemical, clinical samples, reagents, liquid waste)
- Handling liquid nitrogen or retrieving/thawing samples from liquid nitrogen storage
- Working with ultraviolet (UV) radiation
- As required as stated in any risk assessment or the standard work procedure.



***PLEASE CHECK WITH THE SAFETY AND FACILITIES MANAGER IF YOU ARE NOT SURE!!  
PLEASE CHECK BEFORE CARRYING OUT ANY PROCEDURES !***

# Equipment Safety

Ensure equipment are properly maintained in good working condition

Preventive maintenance

Inspect for visible defects before use

**DO NOT use equipment if you are not trained**  
**Ensure that adequate training is received**  
**All training need to be passed and recorded before work can be started in the life science Labs.**

Equipment-related incidents are often caused by untrained persons or poorly maintained equipment

**Good housekeeping** is needed for all the shared equipment and maintaining a safe environment for yourself and other members.



Only trained personnel  
wearing approved  
protective equipment  
may work on  
this machine










# Chemical Safety

## Introduction

- Different chemicals have different properties and can be categorised into the hazard classes as seen in the picture beside.
- GHS labelling
- All solutions in the bottles must be labelled

## Hazard identification











































- More information on the type of hazard the chemical possess can be found in Safety Data Sheets (SDS).
- Labels on containers are also required to ensure users are aware of the type of hazards associated with that chemical (regulation by Globally Harmonised System)




Pictograms and Hazard Classes		
 Oxidiser	 <ul style="list-style-type: none"><li>• Flammables</li><li>• Aerosols</li><li>• Self-reactive</li><li>• Pyrophoric</li><li>• Self-heating</li><li>• Emits flammable gas</li></ul>	 <ul style="list-style-type: none"><li>• Explosive</li><li>• Self-reactive</li><li>• Organic peroxide</li></ul>
 Acute toxicity (severe)	 Corrosive	 Gases under pressure
 <ul style="list-style-type: none"><li>• Carcinogen</li><li>• Respiratory sensitiser</li><li>• Reproductive toxicity</li><li>• Target organ toxicity</li><li>• Mutagenicity</li><li>• Aspiration toxicity</li></ul>	 Environmental toxicity	 <ul style="list-style-type: none"><li>• Irritant</li><li>• Skin sensitiser</li><li>• Acute toxicity</li><li>• Narcotic effects</li><li>• Respiratory tract irritation</li><li>• Hazardous to the ozone layer</li></ul>

# Chemical Safety

## Storage & Segregation

- Some may react with others/environment and should be segregated and stored according to their hazard classification and compatibility.
- For example,
- Oxides should be stored away from flammables.
- Acids should not be next to bases
- Poisons → Poisons cabinet and locked;
- Flammables → flammable cabinet.

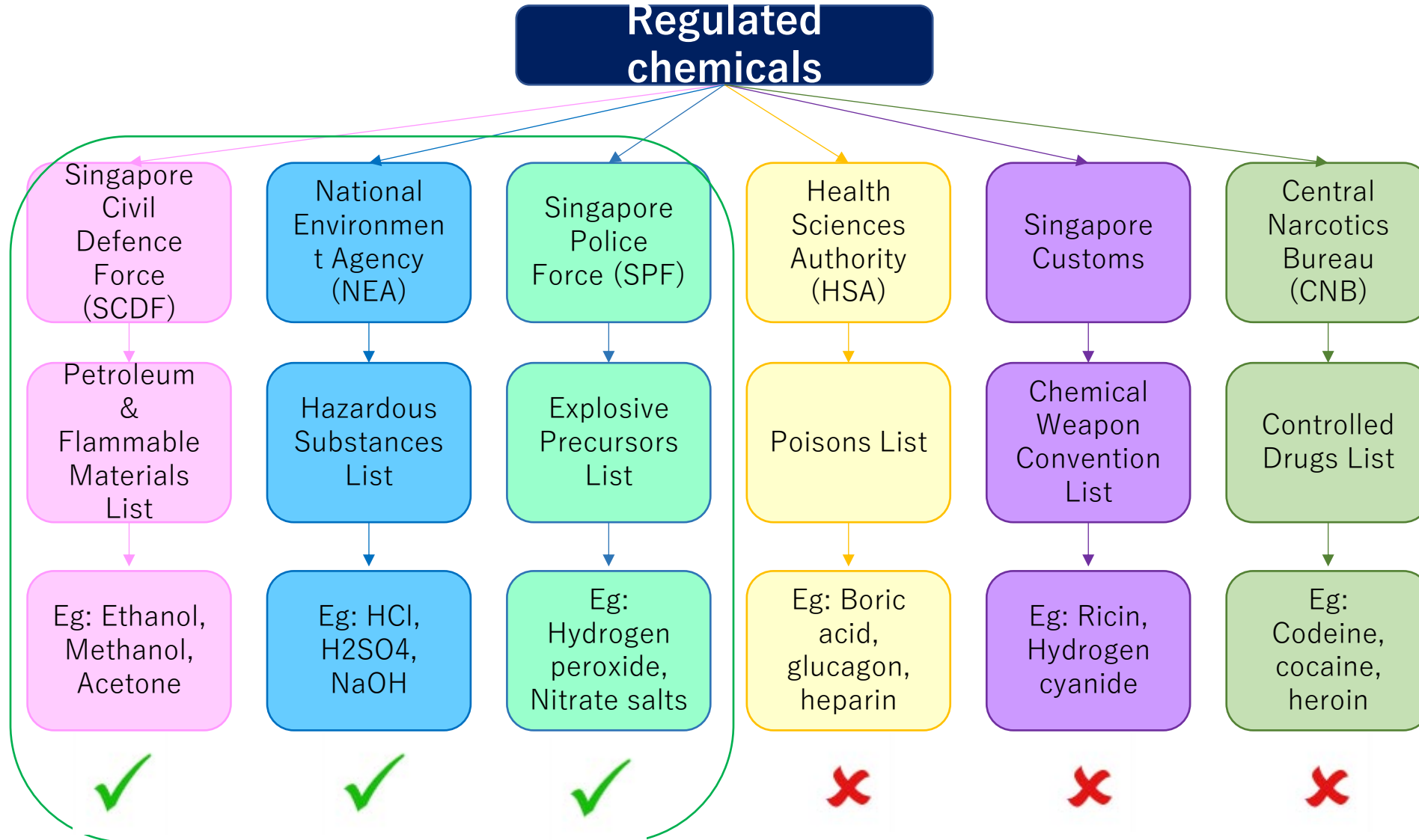
Classes of Materials						
Flammable & Combustible Materials						
Oxidizing Materials						
Materials Causing Serious Toxic Effects						
Materials Causing Other Toxic Effects						
Corrosive Materials						
Dangerously Reactive Materials						

 Compatible Storage     Incompatible Storage     Compatible under certain conditions; refer to SDS

Adapted with permission from by Maya Batey .  
Concordia University (Environmental Health & Safety).

# Chemical Safety

Regulated chemicals



# Chemical Safety

Regulated chemicals



Keep in **locked storage when not in use**

Not on open bench/shelf, in unlocked cabinets, etc.



Records of purchase, storage and use of controlled chemicals must be kept (Inventory Record).

Please email and pass a copy of the chemical inventory along with the MSDS to William when you get new chemicals.



Any loss or theft must be reported to collab Safety Manager and authorities immediately

# Chemical Safety

## Fume Hood

**Always use chemical fume hoods** for any procedures that:

- a) Produce gas as part of reactions
  - b) Have such requirements as stated in Safety Data Sheet (SDS)
    - Involve fine dust / powder
    - Involve volatile chemicals
    - Involve strong smelling chemicals
    - Involve corrosive chemicals
    - Involve chemicals that are toxic by inhalation
- \* Read and check your chemicals MSDS for useful information.
- Conduct risk assessment for new work process to identify possible harmful chemicals/gas production
- \* Do not use the fume hood for storage of items! Please clear the fume hood after usage.
- \* Do not obstruct the back of fume hood



# Chemical Safety

Chemical Waste Management



## Chemical waste and empty chemical containers

Use NEA-licensed Toxic Industrial Waste (TIW) collectors for proper treatment and disposal

## **Accumulate and segregate chemical waste according to compatibility**

Refer to SDS Section 7 on Handling and Storage if in doubt



# Biological Safety

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- a) You are working with biohazards if you are using one of the specimens/materials below:
  - Microorganisms: Viruses, bacteria
  - Human tissues: Blood, urine, cells etc
  - Animal products: Plasma, cells, etc
  
- b) Protect yourself, people around you and the environment from being exposed to biohazards. Prevent lab-acquired infections.
  
- c) Biological experiments need to be conducted in Biosafety Cabinets (BSC).
  
- d) All biohazard materials need to be disinfected, either by autoclaving or using bleach before disposal.

# Laboratory Spills

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- Do contact co11ab Safety and Facilities Manager straightaway!! Do call or whatsapp William Lim at 96933790.
- Spill response will vary depending on:
  - What was spilled?
  - How much was spilled?
  - Where was the spill?
  - What is the potential for release to the environment?
    - What is advised on the MSDS?
- Spills should be cleaned up immediately to ensure proper decontamination.



# Laboratory Spills

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- Do contact co11ab Safety and Facilities Manager straightaway!! Do call or whatsapp William Lim at 96933790.

Watch the Safety Video of LKC Spillage Cleanup



# Laboratory Spills

## Chemical Spills

### Chemical spills:

- Call for help (if major spill) or unable to handle
- Identify the type of chemical spill
- **Check the MSDS of the chemicals**
- Determine the appropriate chemical spill kit to neutralise the chemical
- Follow instructions provided in the kit



**WHEN A SPILL OCCURS**

**Identify Spill Situation**  
Consider the worst until the spilled product is identified

**Secure the Area**  
Approach carefully —  
Restrict access to the spill area until the spill is contained  
Keep people away —  
Set up barriers and tape off

**Identify the Hazard**  
Wear protective gear —  
Observe appropriate personal protection for the spill  
Material Safety Data Sheets —  
Look up the relevant MSDS  
Evacuate area —  
For non-emergency spill control

**Perform Spill Control**  
Stop leak —  
Close valves, plug leaks, cover containers  
Contain spill —  
Reduce the spreading spill & use dikes  
Clean up spill —  
Use appropriate spill control products & equipment for clean up

**Communicate the Incident**  
Report the spill —  
Contact the proper local legal authorities & agencies  
Document the spill —  
Fill out & complete all reports in accordance with local laws

**Remove Spill Control Products**  
Contain used spill control products —  
Do not place in a regular trash can  
Decontaminate equipment & area —  
Clean all reusable equipment in barrels for reuse  
Prepare documents for shipment of used spill products  
in accordance with local laws

**Evaluate Area**  
Make a determination —  
Identify if the spill is safe for regular use again  
Record the incident —  
Obtain spill incident or accident log & the documentation  
Review emergency procedures and contingency plans  
in accordance with local laws

**REMEMBER:**  
Life Safety is the most important consideration during any emergency

# Laboratory Spills

## Biological Spills

### Biological spills:

- Call for help (if major spill) or unable to handle
- Use 10% bleach solution or approved disinfectant (Mix bleach solution fresh each time)
- Leave disinfectant for at least 15 minutes before cleaning



**WHEN A SPILL OCCURS**

**Identify Spill Situation**  
Consider the worst until the spilled product is identified

**Secure the Area**  
Approach cautiously —  
warn others in the area (use spill response signage)  
Keep people away —  
set up barriers and barricade

**Identify the Hazard**  
Wear protective gear —  
choose appropriate personal protection for the situation  
Master's Safety Data Sheets —  
look up & reference MSDS  
Evacuate area —  
for non-emergency, unqualified personnel

**Perform Spill Control**  
Stop leak —  
close valves, plug leaks, wear containers  
Contain spill —  
reduce the spreading spill & seal leaks  
Clean up spill —  
use appropriate spill control products & equipment for clean-up

**Communicate the Incident**  
Report the spill —  
contact the proper regulatory authorities & agencies  
Document the spill —  
fill out & complete all reports in accordance with local laws

**Remove Spill Control Products**  
Don't reuse spill control products —  
for disposal in accordance with local laws  
Decontaminate equipment & area —  
clean all reusable equipment in accordance with local laws  
Prepare documents for shipment of used spill products  
in accordance with local laws

**Evaluate Area**  
Make a determination —  
identify if the area's safe for regular use again  
Record the incident —  
detail spill incident in an incident & the documentation  
Review ongoing procedures and contingency plans  
in accordance with local laws

**REMEMBER:**  
Life Safety is the most important consideration during any emergency

# Sharps

- Needles, scalpel blades, glass Pasteur pipettes, scissors, microscope slides, cover slips, etc.
  - **Limit use of sharps wherever possible!**
  - Replace glass Pasteur pipettes with plastic pipettes
  - Use of sharps and glassware strictly prohibited when working with infectious materials
  - **Never use hypodermic needles for pipetting!**
  - Use proper pipettes or blunt-tip needles



# Sharps

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- Dispose used sharps into puncture-proof sharps bins after use
  - Ensure sharps bin is within work area
  - **DO NOT re-sheath or remove needles**



**Maximum fill line!**

# **Co11ab Life Science Laboratory – Mandatory Compliance Requirements**

## **Waste Management Reporting**

### **10. Biohazard Solid Waste Volume**

- Report the **monthly amount of biohazard solid waste** generated.

### **11. Chemical Solvent Waste Volume**

- As above, ensure chemical solvent waste volume reporting is done **monthly**.

# Waste Disposal Procedures



## 1. Biohazard Solid Waste

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- Dispose of all **solid biohazard waste** into the **yellow biohazard bags**.
- Once sealed, place the bags into the **three designated biohazard bins** located in the waste room. Cleared **twice a month**, depending on the waste volume generated.

## 2. Chemical Solvent Waste

- All chemical solvent waste must be collected in **proper waste bottles** and **clearly labelled** with contents and hazards. Ensure that you have the **Safety Data Sheets (SDS)** or **Material Safety Data Sheets (MSDS)** for all chemicals and biological materials used.
- Inform the Safety Manager **on Monday or Tuesday** for waste collection scheduling.
  - *Note: Waste not logged within this timeframe will **not** be disposed of.*

## 3. No Sharps Disposal

- **Sharps disposal is not available at co11ab.**
- If you need to dispose of sharps, please **inform William in advance** for alternative arrangements.

# Conclusion

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- 1) **Everyone** is responsible for their own safety and the safety of others
- 2) **Follow** rules, regulations and procedures
- 3) **Assess** the risks. Stop and Think, Risk assessments done?
- 4) Be proactive about safety
- 5) If you are not trained, don't do it
- 6) Don't take shortcuts
- 7) Practice good housekeeping Always
- 8) ***If not sure, please check with us, or William @96933790.***
- 9) ***The link to access the LKC office RA is***  
[LKC Office RA Latest.pdf](#)





**Thank You**