Queen Mary
University of London

# GENERAL LABORATORY SAFETY

## SBBS Teaching Laboratories

## 2023

# Aims of this Session

Introduce you to the SBBS teaching labs

What is a practical and what will you learn?

What is health & safety and why do we want you to think about it?

Be able to complete a health and safety quiz

# What do you think you will learn in a practical session?

# What is Health & Safety?

# Why is Health & Safety Important?

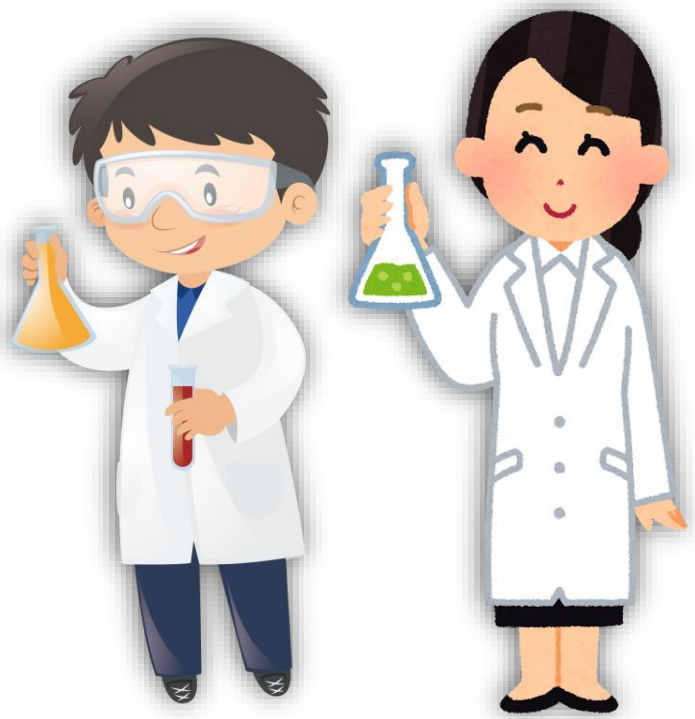
Protect yourself

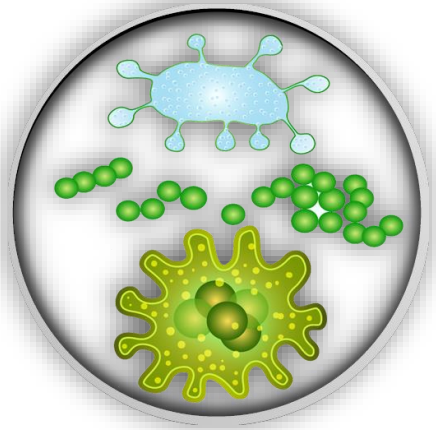
Protect each other

Protect the environment

# What is dangerous in the lab?

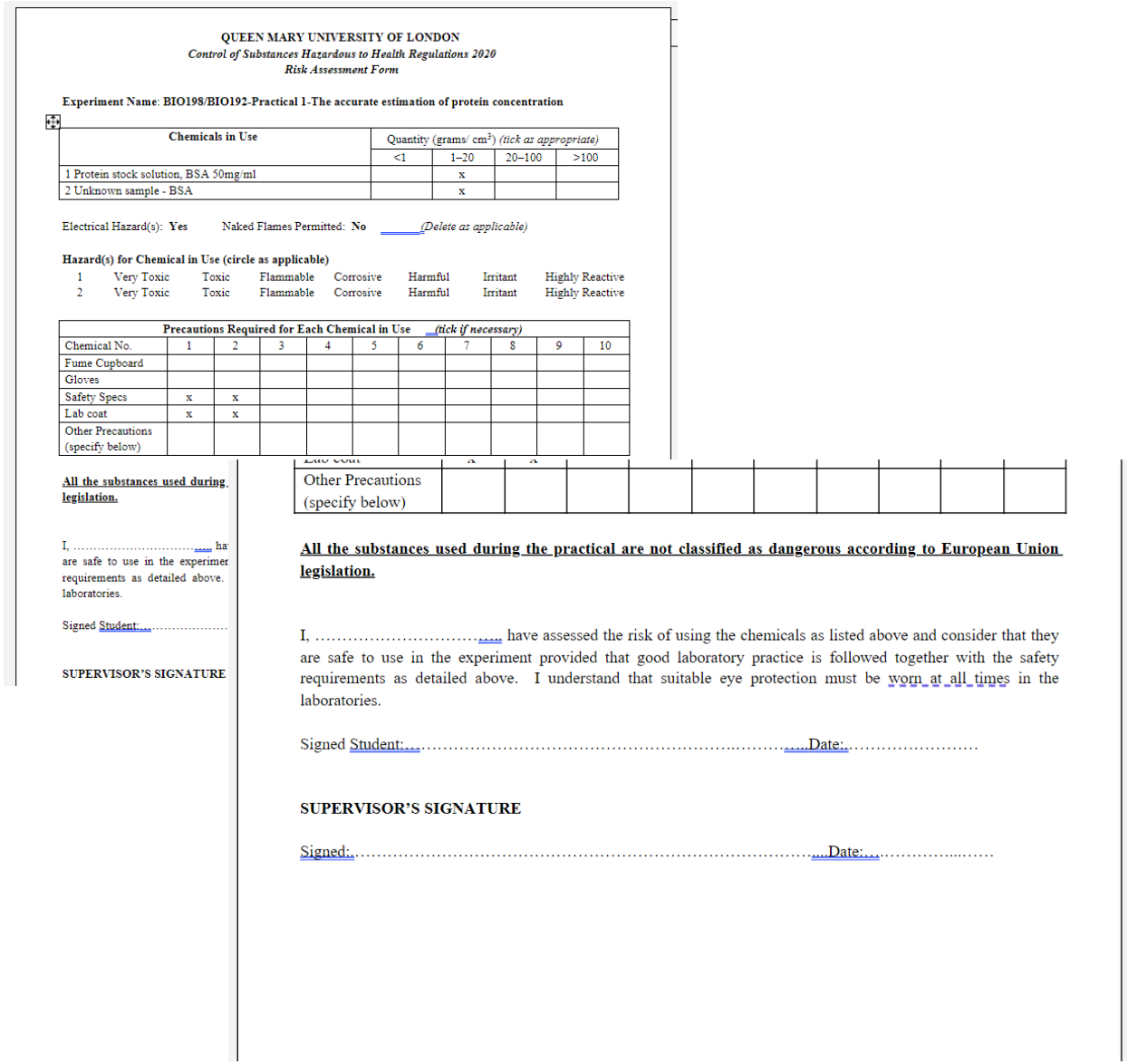
# What is dangerous in the lab?





# COSHH

- You must read and understand these before you enter the lab
- They will be signed before you start by a demonstrator – they will ask you questions!



QUEEN MARY UNIVERSITY OF LONDON
*Control of Substances Hazardous to Health Regulations 2020*
*Risk Assessment Form*

**Experiment Name: BIO198/BIO192-Practical 1-The accurate estimation of protein concentration**

| Chemicals in Use | Quantity (grams/ $cm^3$) *(tick as appropriate)* | | | |
|---|---|---|---|---|
| | <1 | 1–20 | 20–100 | >100 |
| 1 Protein stock solution, BSA 50mg/ml | | x | | |
| 2 Unknown sample - BSA | | x | | |

Electrical Hazard(s): **Yes** Naked Flames Permitted: **No** *(Delete as applicable)*

**Hazard(s) for Chemical in Use (circle as applicable)**

1 Very Toxic Toxic Flammable Corrosive Harmful Irritant Highly Reactive
2 Very Toxic Toxic Flammable Corrosive Harmful Irritant Highly Reactive

| Precautions Required for Each Chemical in Use *(tick if necessary)* | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Chemical No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Fume Cupboard | | | | | | | | | | |
| Gloves | | | | | | | | | | |
| Safety Specs | x | x | | | | | | | | |
| Lab coat | x | x | | | | | | | | |
| Other Precautions (specify below) | | | | | | | | | | |

**All the substances used during legislation.**

I, ..... ha
are safe to use in the experimer
requirements as detailed above.
laboratories.

Signed Student:...

**SUPERVISOR'S SIGNATURE**

| Other Precautions (specify below) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|

**All the substances used during the practical are not classified as dangerous according to European Union legislation.**

I, ..... have assessed the risk of using the chemicals as listed above and consider that they are safe to use in the experiment provided that good laboratory practice is followed together with the safety requirements as detailed above. I understand that suitable eye protection must be worn at all times in the laboratories.

Signed Student:.....Date:.....

**SUPERVISOR'S SIGNATURE**

Signed:.....Date:.....

# COSHH

What are you using?

What to wear to protect yourself

**QUEEN MARY UNIVERSITY OF LONDON**
***Control of Substances Hazardous to Health Regulations 2022***
***Risk Assessment Form***

**Course Name:** BIO 190-Practical 4-Plasmid Extraction and PCR

| **Chemicals in Use** | Quantity (grams/ $cm^3$) *(tick as appropriate)* | | | |
|---|---|---|---|---|
| | <1 | 1–20 | 20–100 | >100 |
| 1 Buffer P2 | | x | | |
| 2 Buffer N3 | | x | | |
| 3 Buffer PB | | x | | |
| 4 Buffer PE | | x | | |
| 5 Buffer EB | | x | | |
| 6 Buffer P1 | | x | | |
| 7 PCR Master Mix | x | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |

Electrical Hazard(s): **Yes / No** Naked Flames Permitted: **Yes / No** *(Delete as applicable)*

**Hazard(s) for Chemical in Use (circle as applicable)**

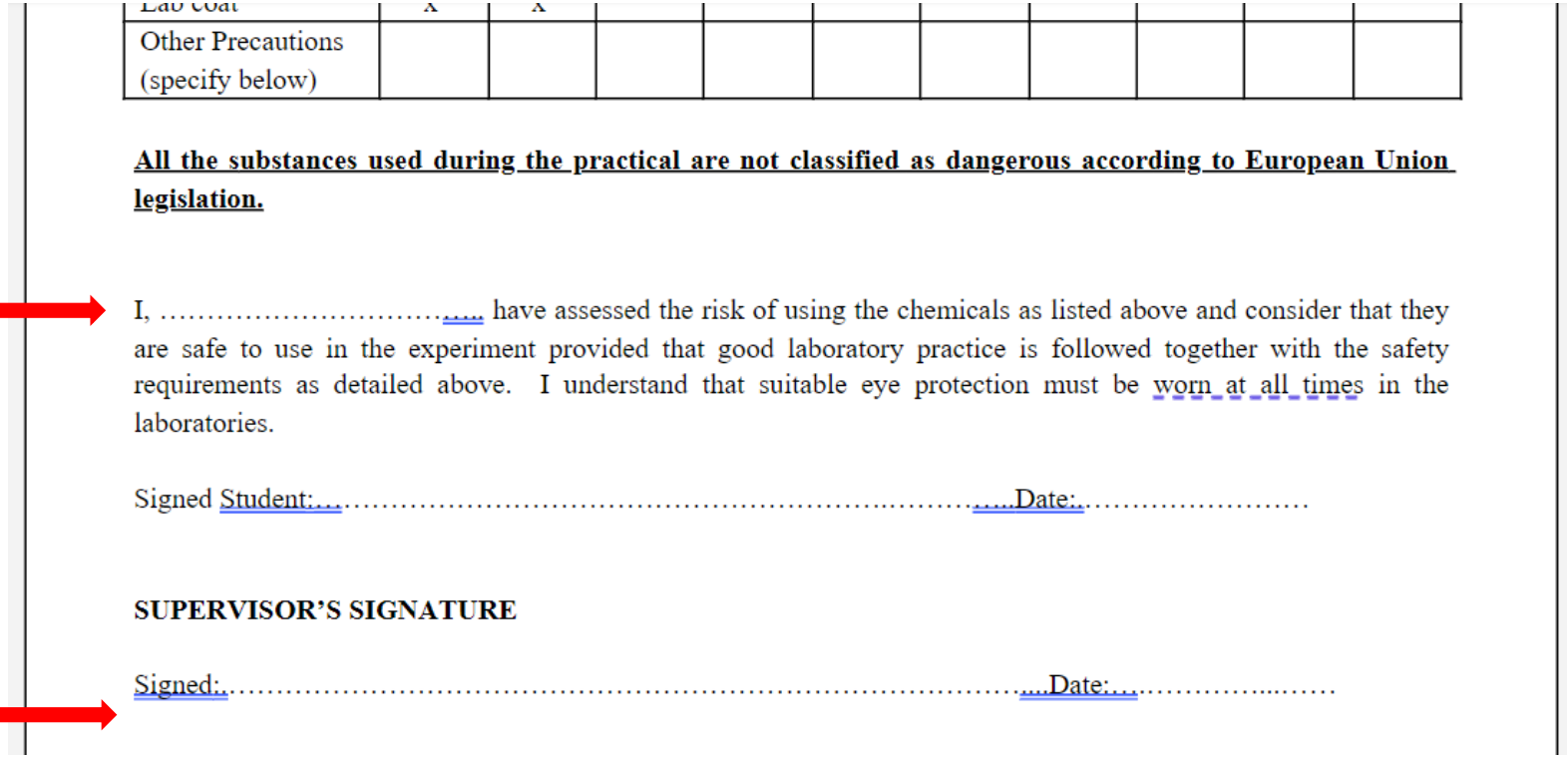
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | Very Toxic | Toxic | Flammable | Corrosive | Harmful | Irritant | Highly Reactive |
| 2 | Very Toxic | Toxic | Flammable | Corrosive | Harmful | Irritant | Highly Reactive |
| 3 | Very Toxic | Toxic | Flammable | Corrosive | Harmful | Irritant | Highly Reactive |
| 4 | Very Toxic | Toxic | Flammable | Corrosive | Harmful | Irritant | Highly Reactive |
| 5 | Very Toxic | Toxic | Flammable | Corrosive | Harmful | Irritant | Highly Reactive |
| 6 | Very Toxic | Toxic | Flammable | Corrosive | Harmful | Irritant | Highly Reactive |
| 7 | Very Toxic | Toxic | Flammable | Corrosive | Harmful | Irritant | Highly Reactive |
| 8 | Very Toxic | Toxic | Flammable | Corrosive | Harmful | Irritant | Highly Reactive |
| 9 | Very Toxic | Toxic | Flammable | Corrosive | Harmful | Irritant | Highly Reactive |
| 10 | Very Toxic | Toxic | Flammable | Corrosive | Harmful | Irritant | Highly Reactive |

| **Precautions Required for Each Chemical in Use** *(tick if necessary)* | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Chemical No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Fume Cupboard | | | | | | | | | | |
| Gloves | x | x | x | | | | | | | |
| Safety Glasses | x | x | x | x | x | x | x | | | |
| Lab coat | x | x | x | x | x | x | x | | | |
| Other Precautions (specify below) | | | | | | | | | | |

# COSHH

The COSHH form must be signed by yourself...

...and a demonstrator



| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Lab coat | X | X | | | | | | | | |
| Other Precautions (specify below) | | | | | | | | | | |

**All the substances used during the practical are not classified as dangerous according to European Union legislation.**

I, ……..... have assessed the risk of using the chemicals as listed above and consider that they are safe to use in the experiment provided that good laboratory practice is followed together with the safety requirements as detailed above. I understand that suitable eye protection must be worn at all times in the laboratories.

Signed Student:……..…….Date:……

**SUPERVISOR'S SIGNATURE**

Signed:……....Date:……..……

# Protecting Yourself

Ensure your lab coat is buttoned up

Goggles must be worn at all times

Gloves must be worn *according to the COSHH risk assessment*.

Glove boxes can be found at the end of each bench.

# Protecting Yourself

Closed Toe Shoes

Legs Covered

Confine Loose Jewellery & Clothing

# Laboratory Hygiene

NO eating or drinking in the lab

Tie back long hair

Store personal belongings in the designated area (lockers or cupboards)

Always remove all PPE and wash your hands before leaving the lab.

## Safety blunders expose lab staff to potentially lethal diseases in UK

**Exclusive: breaches investigated involve dengue virus, anthrax and other deadly pathogens**

## UC and UCLA chemistry professor charged with felony over fatal laboratory fire

## UCL fined £300,000 after student is left partially blinded in experiment gone wrong

## Gruesome accident prompts call to find alternative to needles in chemistry labs

BY MARIA BURKE | 10 MARCH 2020

After a horrific accident involving the routine transfer of a solvent, a French researcher has been raising awareness about the danger of sharp needles in the lab. He is now calling for

Teaching Laboratory 1.01, G. E. Fogg Building:

- Accommodates up to 100 students (60 individual or 50 pairs)

Teaching Laboratory 3.04, G. E. Fogg Building:

- Accommodates up to 40 students (30 individual or 20 pairs)

Teaching Laboratory 2.21, Joseph Priestley Building (JP):

- Accommodates up to 100 students (80 individual or 50 pairs)

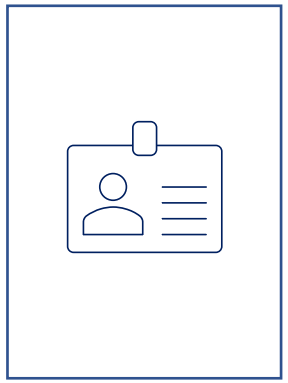
# SBBS Biology Teaching Technical Team

**Dr Chrysoula Dalageorgou**
Senior Teaching Technician

**Darren Cox**
Biology Teaching Technician

**Liz Archer**
Biology Teaching Technician

**Luc Harris-Jukes**
Biology Teaching Technician



**Najwa Zaman**
Biology Teaching Technician

**Alyssia Gordon**
Assistant Teaching Technician

**Ruari McDonald**
Assistant Teaching Technician

**Emma Gammage**
Teaching Technician Manager (Maternity Cover)

**Dr Valentina Rapisarda**
Teaching Technician Manager (Maternity Leave)

# Lab Coats

## Teaching Technician

- Light Blue

## Academic

- Red

## Demonstrator

- Dark Blue

## Undergraduate Student

- White

# Entry into the Teaching Labs

Doors to the labs open 15 minutes before the start of the practical. Make sure you arrive on time!

- Doors will close at the session start time

Enter the lab as soon as possible

For G. E. Fogg lab, 1.01: please enter the lab through the back doors only!

# Padlocks for FOGG Lockers

You will be provided with a padlock

Only use it during the lab session

Do not leave the lockers padlocked unless you have a lab session.

If locked overnight, the padlock will be removed

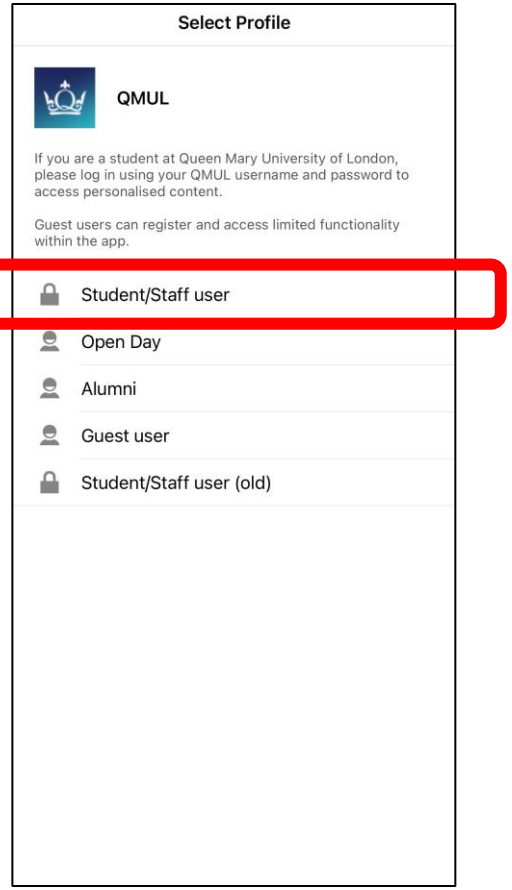
If you lose your padlock, you will need to buy your own.

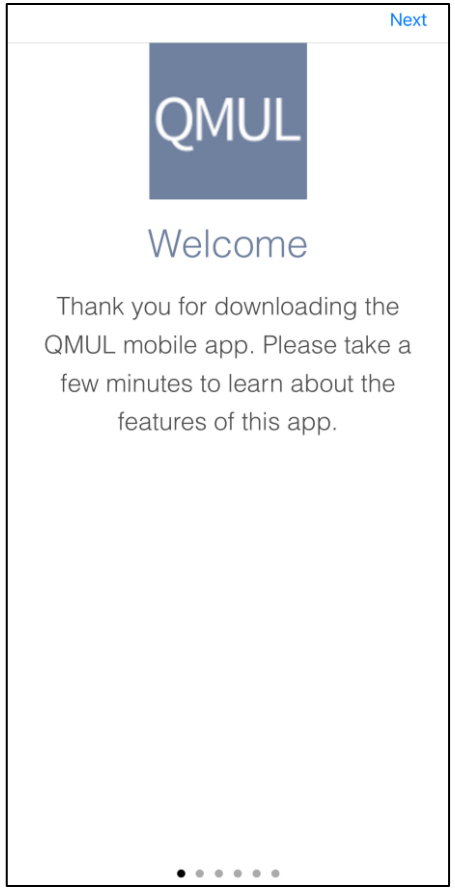
# Entry into the Teaching Labs

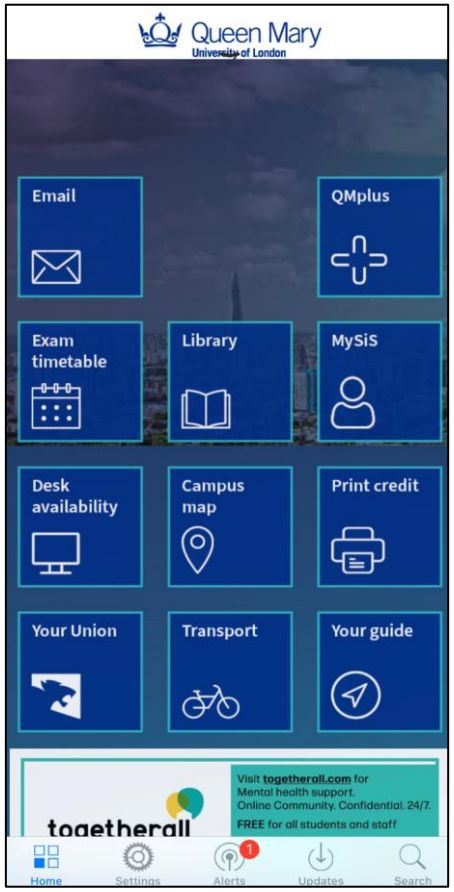
Queen Mary's mobile app, available for Android & iOS devices

Search for 'QMUL' in your app store

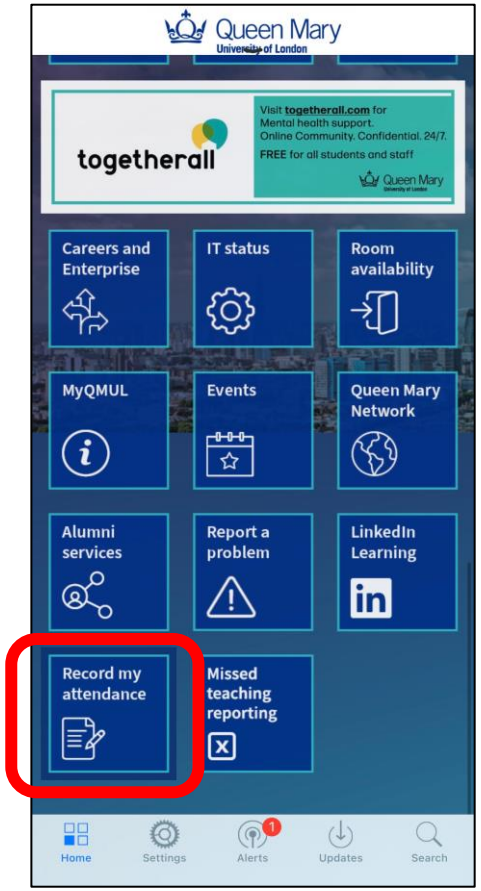
# Entry into the Teaching Labs

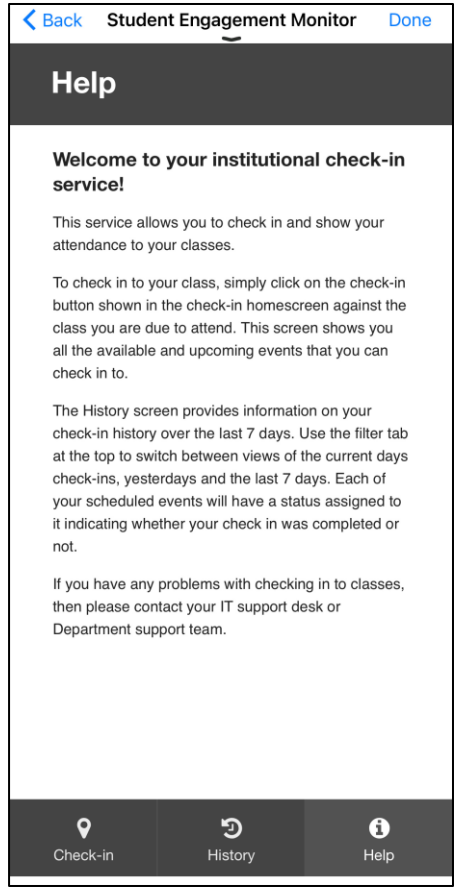


# Entry into the Teaching Labs



# What will you find on your bench?

You will be assigned a numbered workstation

Take the equipment you need from your station drawer

- *Use the drawer numbered with your spill tray number*

Make sure to put everything back and leave your station and drawer as you found it

# What you will find at your station

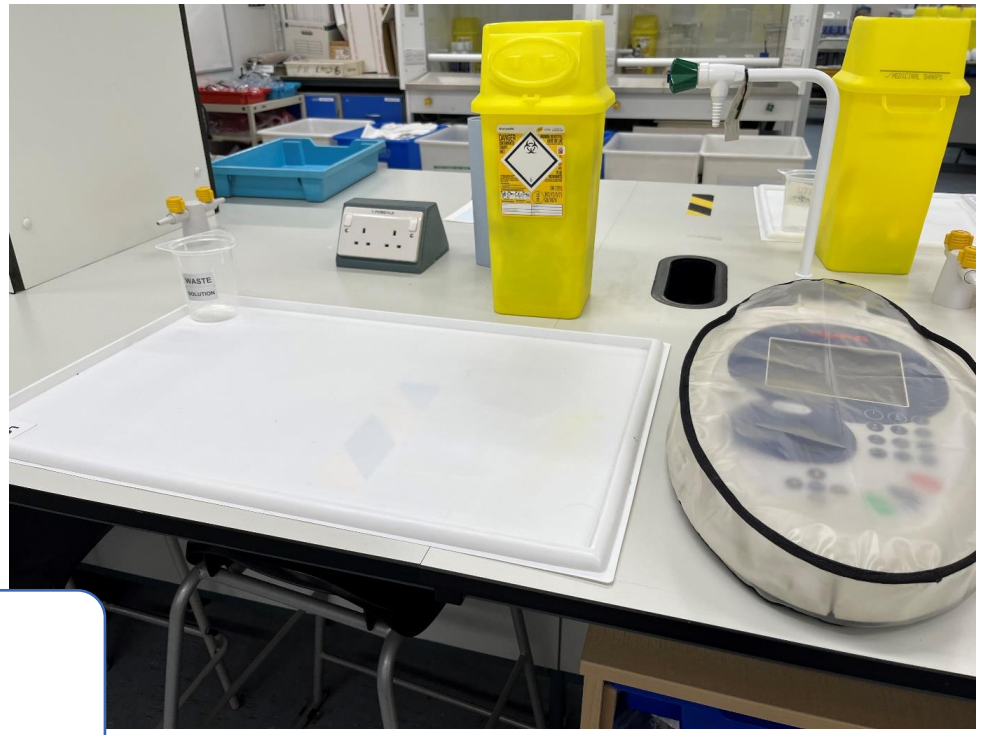
# After you have finished

Leave the workstation as you found it

- *Use disinfecting wipes to clean your area*

Get a demonstrator to check your work

Wash your hands before you leave



# LEAF

The Laboratory Efficiency Assessment Framework (LEAF) is a scheme designed to enable staff and students to improve the sustainability and efficiency of their laboratory areas.

# HOUSEKEEPING


NEVER
RE-SHEATH
NEEDLES

# HOUSEKEEPING


# Scenario 1

You are working in the lab, and you spill some water what do you do?

# Scenario 1

Using blue roll, wipe up the spillage

dispose of the contaminated wipes/tissue in the clinical waste bin

# Scenario 2

You are working with a needle, and you accidentally stab yourself what do you do?

# Scenario 2


- Inform demonstrator/academic/technician asap
  Explain what happened – you will not get told off!
- **In case of emergency, call 3333** (or 999)
- Or +44 (0)20 7882 3333 on mobile
- All teaching labs have First Aid Kits and Eye Wash Bottles

# Scenario 3

You don’t feel very well

You remember that you haven’t eaten since yesterday

# Scenario 3

If you are feeling unwell, please inform staff ASAP

**In case of emergency, call 3333** (or 999)

Or +44 (0)20 7882 3333 on mobile

All teaching labs have First Aid Kits and Eye Wash Bottles

# Scenario 4

The lab becomes very overwhelming, and you are feeling very anxious what do you do?

# Scenario 4

Please inform a member of staff if you are feeling uncomfortable at any point

You are welcome to step out of the lab if you need a break

We have refuge areas in our teaching labs, please ask one of the technicians

Mental Health First Aider

MHFA England

# Scenario 5

You are late for your lab what do you do?

# Scenario 5

Attend the next class and ask the lecturer if you can attend

Please remember though, we cannot guarantee you a space in a class you are not timetabled in

You must never swap classes without seeking permission first as this may cause overcrowding

# Fire Safety (Fogg)

- If the event of a fire alarm, evacuate via the nearest and safest exit.
- Do not use the lift.
- Go to the Fire assembly point: **Geography Square**

# Fire Safety (Joseph Priestley)

- If the event of a fire alarm, evacuate via the nearest and safest exit.
- Do not use the lift.
- Go to the Fire assembly point: **Library Square**

# During a lab session, I need to use the toilet, what do I do?

Please remove all your PPE and wash your hands before leaving the lab

| | |
|---|---|
| Nearest Female Toilets: | • Fogg – G Floor & 1st Floor<br>• JP – 2nd Floor |
| Nearest Male Toilets: | • Fogg – G Floor<br>• JP – 2nd Floor |

# First Aid

If you are feeling unwell, please inform staff ASAP

**In case of emergency, call 3333** (or 999)

Or +44 (0)20 7882 3333 on mobile

All teaching labs have First Aid Kits and Eye Wash Bottles

# Health & Safety Induction Quiz

After your laboratory induction in Welcome Week and before you attend your first practical session you must pass this online safety quiz.

The pass mark for this quiz is 80% and you have a maximum of 3 attempts. Your highest grade will be recorded.

After 3 failed attempts, you must contact Emma Gammage or Dr Chrysoula Dalageorgou for further training

- e.gammage@qmul.ac.uk
- c.dalageorgou@qmul.ac.uk

# QUIZ TIME!

Students taking BMD116/164

- Biomedical Sciences, Neuroscience, Pharmacology with Innovative Therapeutics

Quiz can be found on QMplus under the “Lab Practicals” tab on the BMD116 module homepage

# QUIZ TIME!

Students taking BIO190

Biology, Zoology, Medical Genetics, Biological Sciences

Quiz can be found on QMplus under the “Health & Safety” tab on the BIO190 module homepage

Students taking the Science and Engineering Foundation Program

Quiz can be found on QMplus under “Biological Science Welcome Week” tab