



**Centre for Medical & Industrial Ultrasonics (C-MIU) Laboratory 1
Room 324
James Watt North building**

CODE OF PRACTICE

The adoption and practice of good safety procedures are of paramount importance both for the health and safety of fellow workers and for the integrity of the fabric of the C-MIU laboratory.

Note: No latex products are to be brought into the laboratory

1. No work may be carried out in the C-MIU Lab 1, Room 324, James Watt North building without the prior permission of Professor Margaret Lucas, Professor Sandy Cochran and Dr Paul Prentice (Lab Guardian).
2. Online risk assessments must be completed for specific tasks, or use of specific items, and approved by your supervisor, the appropriate responsible person(s) (see list below) and Dr Paul Prentice, BEFORE ANY WORK COMMENCES. Such work may involve high voltage, use of a laser, use of some chemicals or biological cells/material.

<https://webapps.eng.gla.ac.uk/tools/risk/>

3. New staff and students should also make themselves aware safety procedure and of the location of safety equipment in the lab.

These are:

Emergency telephone number: **4444**

Fire Extinguisher (Next to side door to main lab - **Entry Door during COVID reopening – see COVID-19 measures below**)

First Aid kits (JWS Level 2: Workshop, Level 3: Janitors box, Level 4: Tuck lab)

Ear protection (Hanging inside the main lab door)

Laser safety spectacles (Hanging inside each lab, by the door)

Emergency exit (through main building entrance, through the exit leading to the Wind Tunnel lane or through James Watt building North)

- ~~4. Work outwith standard office hours and weekend working requires the permission of your supervisor. If permitted, the out-of-hours working book located in the foyer of the JWS building must be signed (on arrival **and** departure).~~

COVID-19 measure:

C-MIU lab1 access is recommended for between 8am – 5pm, until further notice.

Out of hours working is possible with prior agreement of your supervisor. You must inform security security-main-campus@glasgow.ac.uk or extension 4282 when you arrive, or at 5 pm if you are already in the lab, and again when you leave.

5. Various lasers are used in this lab, with Class IV lasers contained within the laser enclosure (sliding door entrance, to the left of the main lab entrance). DO NOT ENTER THE ENCLOSURE when the **LASER IN USE** sign is illuminated.
6. All new lasers, and users of lasers and high power light sources in the School should register with John Nelson and watch the laser safety video owned by the University (on DVD and kept by John Nelson – Paul Prentice also has a DVD). The laser-safety video should be made available to new users of lasers within 1 week of the user reporting to the laser-safety officer. The new user will then complete the University's laser user registration form. Records of all laser users are held by the University Radiation Protection Service. Existing users of lasers should view the video at least every 5 years to maintain awareness of developing safety issues and best practice.
7. Ear protection and laser safety goggles must always be used, when appropriate.



James Watt building North Level 3: Floor plan

COVID-19 measures

1) Guidance from the HSE, UK Government and Scottish Government to manage the risk related to COVID-19 pandemic must be adhered to within C-MIU Lab1. These include physical distancing, frequent hand washing and hygiene measures, cough etiquettes and face coverings in enclosed public spaces.

James Watt School of Engineering – Covid19 – Return to Work Induction can be found here:

<https://www.gla.ac.uk/schools/engineering/safety/>

2) Physical distancing measures of at least 2 metres must be observed at all times within C-MIU Lab1. During Phase-2 return a **maximum capacity of 7 researchers is imposed**, with a single individual allowed in each of the lab-areas (see *lab floorplan, below*), at any time. Movement around the lab should be kept to a minimum.

3) Demand to use the lab will be managed by the PIs, the Lab Guardian (Paul Prentice) and C-MIU manager (Dr Richard Mosses), in collaboration with the School Safety Coordinator, according to a pre-arranged rota using www.bookkit.org. Please consult with your supervisor to coordinate with the rota. Impact on the overall capacity of the James Watt building will be reviewed by the Technical Services Manager.

4) Entrance to the lab must be via the *Entrance Door*, indicated below.

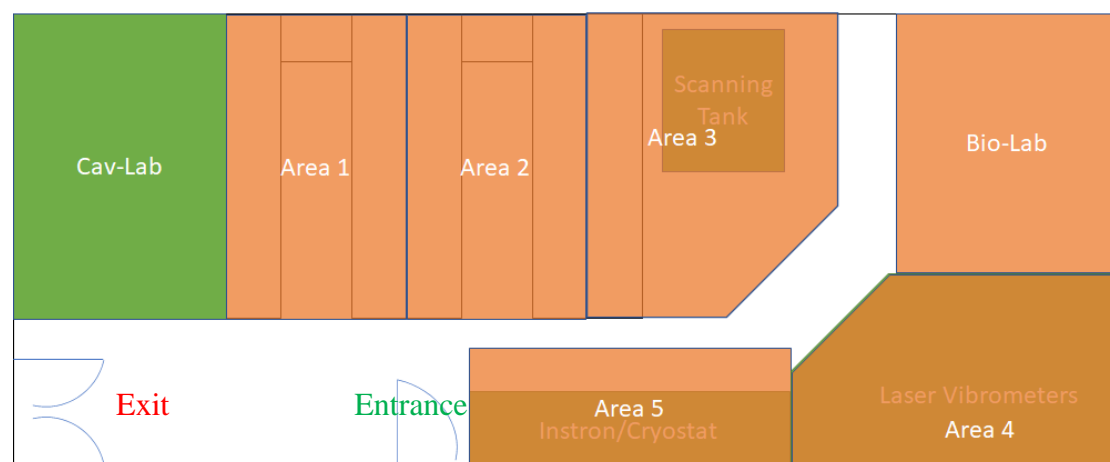
5) Knock and wait before entering, to allow clearance of the door area.

6) You must exit by the indicated *Exit Door*, as below.

7) Lab users should only wear gloves for prolonged times if this is normal practise (bio-lab Area). Gloves should be used briefly, however, to find tools in the lab tool box. Regular hand washing is essential. Wipe workstation surfaces, materials and equipment, before starting to work, and before leaving.

8) Emergency support (First Aiders and Fire Area Officer) may be reduced due to COVID-19 restrictions on building capacity. Task risk assessments need to be reviewed to account for the above measures. All researchers accessing the lab must have undertaken the University of Glasgow COVID-19 awareness training (on Moodle)

C-MIU Lab JWS 3.24 – All Areas



COVID Area management floorplan and Door use.

General lab practice

1. To minimise trip hazards, extension cables should be plugged into the closest available socket.
 - i. Once equipment is not in use, it should be turned off and any extension cables used should be tidied to a suitable location.
 - ii. Leads and plugs should ONLY be used on the allocated item of equipment and should NOT be switched between equipment
 - iii. The gain on power amplifiers should be set to zero when not in use.
2. Electrical connectors between different devices or equipment should be safe. If in doubt speak with electrical technicians (Rm 619).
3. If you are unsure how to correctly use an item of equipment, seek assistance from an appropriate responsible person(s) (see list below).
4. The fridges in the lab are used to store perishable ultrasound phantoms and contrast agents and therefore should only be used for this intended use. Do not to store food/drink in the lab fridges.
5. The hot water urns in the lab is for heating water for experiments only.
6. If outside clothing or bags etc are brought into the lab they should be hung on the hooks by the main entrance (**Exit Door, during COVID re-opening**).
8. Food and drink are not permitted in the lab.
9. Once experimental work has been completed and the experimental setup is no longer required, the experimental area should be cleared in preparation for another researcher/experiment. The following practices should be followed after the completion of experimental work;
 - i. Equipment should be placed in an appropriate location ensuring its safety, minimising potential damage and allowing other researchers access to it.
 - ii. The experimental area, if required, should be wiped or cleaned. This is NOT the responsibility of the cleaner.
10. Laboratory doors should remain locked at all times to ensure security.
11. If equipment is required to leave the lab, permission is required from your supervisor and, if necessary, seek assistance.
12. If equipment breaks down or is not working, report the fault to your supervisor immediately.
13. A fault with the fabric of the room, such as a lighting failure, should be reported through Maintenance Request found on the Estates and Buildings webpage, <http://www.gla.ac.uk/services/estates/>.
14. All non-contaminated broken glassware, slides and coverslips must be disposed of in the sharps bins provided.

Laser work

15. If you plan to use any laser equipment you must first consult John Nelson and Paul Prentice to receive appropriate training on how to safely use that device. Goggles are provided for your safety, use them at all times whilst you operate any laser. General guidelines on using lasers can be found at; <http://www.gla.ac.uk/schools/engineering/studentstaff/safety/>.
16. Class IV lasers are contained within the interlocked laser enclosure. Do not enter the enclosure when the **LASER IN USE** sign is illuminated. Goggles for the



appropriate wavelengths and powers are available (hanging inside the laser enclosure door), and should be must be used at all times a laser is operational. Lasers include:

- i. A frequency-doubled pulsed Nd:YAG, emitting at 532 nm

Operating instruction are available at the laser enclosure safety station.

17. The laser blocking blind over the window must be closed during the use of any laser, within the enclosure.
18. Three laser vibrometers are located in the main lab (two Class II lasers, and a Class IIIb laser).
 - i. When any laser vibrometer is in use, the **LASER IN USE** sign outside the main lab door must be illuminated, and all lab doors must remain closed.
 - ii. Lasers should never be directed at any entrance to, or window of, the lab.

Biological work

19. If you are doing experiments in microbiology related areas then you will need to have appropriate training before starting this work.
20. All culture work must be carried out in the laminar flow cabinet.
21. All waste products from culture work i.e. plastic petri dishes, pipettes and glassware must be placed in the Biological Waste containers which are taken to Life Sciences periodically for safe destruction.

Specific named items and responsible persons

22. The following people are responsible for specific equipment/areas in the lab. No work should be undertaken within these areas before training and approval has been obtained from the relevant person(s).

- i. Power amplifiers, Scanning tank
Jill Savva j.savva.1@research.gla.ac.uk
- ii. High speed cameras
Paul Prentice paul.prentice@glasgow.ac.uk
- iii. Lasers (general)
Paul Prentice paul.prentice@glasgow.ac.uk
- iv. Laser vibrometers
Xuan Li xaun.li@glasgow.ac.uk
- v. Tissue culture
Jill Savva j.savva.1@research.gla.ac.uk
- vi. Software
Colin Souza c.souza.1@research.gla.ac.uk
- vii. High temperature
Matthew Wilkie m.wilkie.1@research.gla.ac.uk