School of Engineering
University of Glasgow

Biomedical Engineering Research Group

Temporary Level 6 3D printing Lab

Rankine Building Room 605

CODE OF PRACTICE

The adoption and practice of good safety procedures is of paramount importance both for the health of fellow workers and for the integrity of the fabric of the laboratories in Biomedical Engineering.

The activity to be carried out in this lab will be temporary as a consequence of the necessary occupancy restrictions on research labs. This is a teaching lab and any teaching will take priority when required.

1. Lab Safety Management Responsibilities

a) **Everyone** has a role in protecting the health and safety of both other lab users and themselves, and thus should be familiar with the **School's Safety Manual**.

b) **Academic Supervisors** take full responsibility for the health and safety of their own group's research activities, and consequently must ensure their staff and students are familiar with both the content of this **Code of Practice** and the **School's Safety Manual** and apply its requirements**.**

c) No research activities shall be carried out in the **temporary** 3D Printing Lab, Room 605 Rankine Building, without the prior permission of **Prof Gadegaard**.

d) No work shall be carried out until a **Risk Assessment** has been conducted by the research staff/students, **approved by Prof Gadegaard** and the **Director of Safety**.

e) An **electronic copy** of the approved Risk Assessment shall be sent to the Lab Responsible Person to be kept as record (note that this can be done using the online risk assessment system). A hard copy of the approved risk assessment shall be displayed next to the relevant research rig and equipment for inspection.

f) **All lab users** should make themselves aware of the **general safety procedures** highlighted in the School's Safety Manual and of the location of safety equipment in the lab.

g) These are:

   a. In case of emergency, dial telephone number: **4444 (internal), 0141 330 4444 (external)**

b. **Fire Extinguishers** are located on the wall in room 610, on the wall at the door of room 607, on the wall at door of room 607A, in 611 on the floor at door to 611D, on wall in 611B near the door.
c. **Fire blanket** next to the hand washing sink in room 610, next to the exit door to room 611D in room 611.
d. **First Aid kits** on the cupboard next to the sink in room 610 and on wall near the door to room 607A in room 607
e. **Eye shower** in room 610 (next to the sink) and 611 (next to sink); the lid of the eye shower should be opened prior to starting any work in the lab and closed after leaving the lab.
f. **Emergency shower** and **Eye shower** in room 607A (in the corner next to the emergency exit leading to the room 605.
g. **Safety goggles/spectacles** and other **protective clothing** can be found in all labs. Safety goggles are found in a drawer beside the sink in room 610, in a drawer labeled goggles in 607A and on the shelf of the first bench in 611. Laboratory coats can be found in locker 31 in the corridor, labelled lab coats, on the coat rack at the entrance to room 607, in room 610, and in rooms 608 and 607B. Face mask respirators can be found in the drawers at the entrance to room 607A.
h. **Emergency exit:** Information can be found on the emergency exit plan at the level 6 lift. Work outside normal office hours (including weekend working) requires the permission of your supervisor. This can be given by an e-mail trail for audit purposes in the event of an accident and can be for multiple or extended periods of time. If permitted, the out-of-hours working book located in the foyer of the Rankine building must be signed and the time recorded on arrival and the time of departure. Potentially dangerous operations **must never** be undertaken out-with normal hours **unless a second responsible person is present**. (Please read the safety regulations in the School's Safety Manual for more details.)

2. Practice of General Activities

a) The experimental area must be **kept tidy and clean**. This is **NOT** the responsibility of the cleaners. Good housekeeping must be maintained by the lab users and be monitored by the responsible person of each area.

b) Food and drinks are not permitted in the lab.

c) Access to switch boxes and valves must remain clear and must not be blocked by equipment.

d) Dedicated storage cupboards and areas must be used.

e) **Laboratory door should remain shut** at all times to ensure security and fire safety.

f) Equipment must be placed in appropriate locations to safe-guard its integrity, minimise potential damage and to allow other researchers access to it.

g) Once experimental work has been completed and the experimental setup is no longer required, the **experimental area must be cleared** in preparation for other experiments and researchers.

h) **If it is necessary to remove equipment from the lab, permission must be given by your supervisor and the Lab Responsible person.**

i) If equipment breaks down or is not working, report the fault to Prof Gadegaard. Do not attempt to repair equipment yourself.

j) A fault with the fabric of the room, such as a lighting failure, should be reported through the Maintenance Request portal found on the Estates and Commercial Services webpage, http://www.gla.ac.uk/services/estates/.

3. Covid-19 measures

1) Guidance from the HSE, UK Government and Scottish Government to manage the risk related to Covid-19 pandemic must be applied to the Microscopy Lab. These include physical distancing, frequent hand washing and hygiene measures, cough etiquettes and face covering in enclosed public space.

2) Physical distancing within the 3D Printing Lab means a maximum capacity of 1 (one) person working in the room at any time.

3) Demand to use the lab will be managed by the Lab Guardian in collaboration with the Safety Coordinator. Collaboration will be required between lab users and Prof Gadegaard to establish a rota where necessary. Impact on the overall capacity of the Rankine building will be reviewed by the Technical Services Manager.

4) Lab users must wash their hands regularly and wipe workstation surfaces, materials, and equipment at the start of their work and before leaving.

5) Emergency support (First Aiders and Fire Area Officer) might ne constrained due to Covid-19 restriction on building capacity. Task risk assessments need to be revewed to include the above measures and to review with personnel through the risk assessment, which work can be safely undertaken with reduced access to emergency support. A Covid-19 risk assessment template can be found here (https://www.gla.ac.uk/media/Media_723618_smxx.docx).

4. Practice of Hazardous Activities

1) **Electrical connections** between different devices or equipment should be safe. If in doubt, speak with technicians in the Electronics Workshop (Rankine level 7).
2) To minimise the risk of **falling objects**, no equipment or lab materials should be kept on top of cupboards and file cabinets, particularly those next to the edge of the upper floor.
3) Fire hazards:
    i. All **flammable materials** (gases, liquid and solids) should be stored and handled in accordance to the School's Safety Manual and relevant SEPS guidelines.
4) Explosion hazards when using compresses gases:
    i. You should seek support from technicians when moving gas cylinders.
    ii. All users of compressed gases should be trained.
5) Eye and laser safety spectacles should be used when appropriate.

6) If you are unsure how to correctly use an item of equipment, seek assistance from an appropriate responsible person(s).