School of Engineering
University of Glasgow

Laser Laboratories

Rooms 231 and 233

James Watt South building
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 Laser Laboratories.

1. No work may be carried out in the Laser Laboratories, Rooms 231 or 233, James Watt South Building without the prior permission of Dr James Sharp.
2. No work may be carried out until all necessary safety documentation has been read, understood and an email sent to james.sharp@glasgow.ac.uk acknowledging this and with SAFETY DOCUMENTATION in the subject heading. New staff and students should also make themselves aware of the location of safety equipment in the laboratories and the nearest fire exit.

   These are:

   Emergency telephone number: **4444**
   Fire Extinguisher (in corridor)
   First Aid kit (JWS Level 2: Workshop)
   Ear protection is available if needed.
   Laser safety spectacles/goggles (Kept at the inner entrance to each lab. Please return after use.)
   Emergency exit (either end of corridor and take stairs to ground level).
3. Work outwith normal working hours (9am to 5pm) requires the permission of Dr James Sharp. If permitted, the “Late working book” located in the foyer of the JWS building must be signed.
4. Ear protection, protective clothing, disposable gloves and laser safety spectacles should always be used when appropriate.

General lab equipment and behaviour

5. Personal belongings such as bags and coats should be stored in owner’s office/locker or under a bench, not left on the open floor where they present a trip hazard..
6. No food or drink may be consumed in the laboratory.
7. If you are unsure how to correctly use an item of equipment, do not risk damaging it or yourself. Ask an appropriate person for assistance.
8. If you are doing work that requires a risk assessment then please complete a Risk Assessment Form before starting the work. Such work may involve high voltage, use of a laser or use of some chemicals.
9. To minimise trip hazards, extension cables should be plugged in to the closest available socket. Use cable walkover covers if available.
   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. Be particularly careful of experiments involving water and electricity. Ensure that extension cables are safely placed away from any possible water spillage.

10. Once work has been completed and the experimental setup is no longer required, the lab area should be cleared and tidied in preparation for another experiment. Equipment should be returned to its storage space.
11. Soldering Irons must not be left on when not in use.
12. Laboratory doors should remain locked at all times to ensure security.
13. If equipment is to be removed from the laboratory, permission is required from Dr James Sharp.
14. If equipment breaks down or is stops working, report the fault immediately to Dr James Sharp.

Use of laser equipment

15. If you are to use any laser equipment you must first consult Dr James Sharp and receive appropriate training on how to safely operate that device. General guidelines on using lasers can be found at http://www.gla.ac.uk/schools/engineering/studentstaff/safety/.
16. In room 231 there are :
    i) a class 4 Ar^+ laser system. Operating instructions are available on the lab entrance (Scheme of Work).
    ii) Various He-Ne lasers and a DPSS laser. These must be securely fixed in position before use (e.g. to optical table) and, as far as possible, the beams enclosed before use.
17. In room 233 there is a class 4 CO_2 laser. Operating instructions are available on the lab entrance (Scheme of Work).
18. Wear and ensure others in the room are wearing safety goggles appropriate to the laser wavelength and power. Class 4 lasers can damage tissue and skin and so opaque gloves (e.g. latex) must be worn and hands (or fingers etc) should not be placed in the beam path as a method of locating the beam.
19. Ensure the laser warning sign and interlocks are active when the lasers are on. All doors must remain closed during the experiments.
20. Ensure all those present are aware of when lasers are on, and their light paths and possible reflecting surfaces.
21. When designing new optical set-ups: ensure laser light cannot leave the optical table or breadboard, or be directed towards the door. Avoid having beams that are angled upwards, towards eye-level. Remove jewellery or other reflective items when working with laser light.
22. When using IR lasers, have an IR viewer and card available to locate beams.
23. Be aware of electrical safety surrounding the high voltages found on many laser tubes.
24. When appropriate, ensure laser chillers are on, and functioning efficiently. Keep water away from electrical connections.

Use of chemical equipment

25. Anyone wishing to use new or additional procedures (chemical) MUST inform the lab supervisor or lab staff BEFORE ordering any chemicals or starting practical work. A COSHH Form or Risk Assessment Form must be completed using the School web based database and approved by the supervisor. Also, other lab users should be informed by email if a new and particularly hazardous procedure is performed.

26. Any work with solvents, corrosive chemicals, concentrated and moderate strength acids and alkalis must be carried out in the extraction cupboard with safety glasses and disposable gloves worn. Used gloves and paper towels must be put into the bin bag.
27. Waste solvents must be disposed of using waste bottles. Acetone, Methanol and Iso-Propyl Alcohol (IPA) poured into a waste bottle labelled UNCHLORINATED waste. NEVER add acid or alkalis to these bottles.
28. Organic solvents must never be heated on the hotplate.
29. ALL containers, beakers, bottles etc. must be correctly labelled with owner's name, date and contents. Unlabelled containers or those not properly labelled will be thrown away.
30. All non-contaminated broken glassware, slides and coverslips must be disposed of in the waste glass box