

**DEPARTMENT OF ELECTRONIC AND
ELECTRICAL ENGINEERING**

HEALTH AND SAFETY POLICY

Issue 2

October 2017

DOCUMENT HISTORY AND REVISIONS

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2	23/10/2017	Revised version with elaboration and clarifications of role responsibilities

Next Review due: No later than 23/10/2018 – responsibility for this assigned to Head of Department

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1. INTRODUCTION BY THE HEAD OF DEPARTMENT

The Department of Electronics and Electrical Engineering (EEE) is required under the provisions of the University Health and Safety Policy and the Health and Safety at Work Act 1974, to produce a statement of policy with respect to the health and safety of everyone who uses EEE premises or may be affected by the undertakings of EEE members off-campus. The University Health and Safety Policy is available via the following link:

https://hs.shef.ac.uk/documents?utf8=✓&search%5Btitle_or_description_or_base_tags_name_like%5D=policy&search%5Bcategory_id_eq%5D=&search%5Bdocument_category_id_eq%5D=&bookmarked_only=

EEE will continually strive to achieve the highest possible standard rather than rely on legal minimum. EEE also expects supervisors/managers at all levels to actively pursue increasing standards of health and safety management in line with University policy.

EEE, as a department, recognises the importance of our staff and students understanding and appreciating the extent of their individual responsibilities to maintaining a safe working environment. We expect their full co-operation in ensuring that the Health and Safety Policy and Procedures of the University and department are observed, starting with reading and understanding this document.

This document is intended to ensure EEE's statement of Health and Safety Policy is in line with that of the University and to bring these policies to the attention of all employees and students. It will also serve to provide details of the organisation and arrangements for carrying out these policies, as indicated by the Act.

The Health and Safety Policy Statement is supplemented by individual procedures covering a range of activities and everyone must ensure they are aware of the safety precautions appropriate to the area in which they work. As HoD, I recognise that overall responsibility for the health and safety of all persons affected by the undertakings of EEE lies with me. This responsibility is successively devolved through EEE's management structure, and all EEE staff and students carry a personal responsibility for the health and safety of those affected by their actions.

I would encourage you to adopt at all times a positive attitude towards health and safety requirements and to promote a healthy and safe working environment for ourselves, our students and others affected by the work of the department.

This Policy will be reviewed and updated on at least an annual basis, or more frequently should changes in legislation require.

Geraint Jewell
Head of Department, Department of Electronic and Electrical Engineering.
October 2017

2. DEFINITIONS

The following definitions have been adopted for this document:

3. THE HEALTH AND SAFETY POLICY STATEMENT

It is the Policy of EEE to:

1. Regard legal compliance as the lowest acceptable standard of management with regard to health and safety. Please note that for the purposes of this policy document the term 'health and safety' will be deemed to include all aspects of occupational health;
2. Regard health and safety as a core management function;
3. Develop a clear structure identifying health and safety responsibilities at all management levels across the Department;
4. Promote an attitude of safe working by employees and students in all aspects of the Department's work, underpinned by appropriate training and disciplinary procedures in line with the overarching University policy;
5. Encourage discussion and consultation between management, employees and students on safety, health and working environment matters and establish a Health and Safety Committee for this purpose;
6. Maintain a safe and healthy working environment and safe methods of operation;
7. Ensure the provision and maintenance of premises, plant and equipment to a safe level;
8. Ensure the provisions of appropriate resources to meet health and safety issues;
9. To bring to the attention of all staff and students, their responsibilities to ensure the health and safety of themselves and any other persons affected by their actions or omissions;
10. Provide all necessary information, instruction, training and supervision, to ensure the health and safety of employees at work;
11. Provide as appropriate and ensure the correct use of, approved safety equipment and protective clothing and to ensure no charge will be personally levied on any employee in respect of anything carried out or provided in pursuance of any specified requirements of relevant statutory provisions;
12. Ensure immediate and accurate reporting and investigation of occupational ill-health issues, accidents and incidents;
13. Ensure the provision of an appropriate number of specialist safety staff with responsibilities for safety and health and to ensure appropriate contingency arrangements are made during the absence of such staff to meet the relevant statutory requirements;
14. Develop a system of inspection, monitoring and auditing procedures which will allow the identification of risk and ensure that acceptable standards of risk management are being achieved across the University.
15. Review this Health and Safety Policy not less than once every year;

16. Make specific arrangements on sites controlled by the University to ensure that contractors are carrying out their responsibilities for Health and Safety to a standard acceptable to University management.

17. Ensure that the health and safety of all staff, students, contractors, visitors and any others who may be affected by our undertakings is safeguarded, so far as is reasonably possible.

4. STATEMENT OF RESPONSIBILITIES

All employees have the responsibilities listed in the sub-section 'All Employees'. Designated individuals have additional and specific responsibilities as detailed in the relevant sub-section

4.1 All Employees

The Health and Safety at Work Act 1974 states that EVERYONE has a responsibility for health and safety, their own and that of others working around them. It is important that everyone appreciates the extent of their responsibilities, namely that they:

- Shall make themselves familiar with the Health and Safety Policies of the University and of the Faculty and Department, and shall be fully familiar with sections of these Policies which directly affect their particular activities;
- Shall accept individual responsibility to:
 - take all reasonable care for the health and safety of themselves and of any other person who may be affected by their acts or omissions;
 - co-operate with the University so far as is necessary to enable it to comply with its legal duties;
 - undertake as required all health and safety training which is deemed necessary by their line manager to secure their own health, safety and welfare and that of anyone else affected by their actions while at work.
- Shall report to supervisory staff/DSO/DAM/DTM/HoD any unsafe practices or any occupational ill-health issues/accidents/incidents/ dangerous occurrences or near misses, whether or not injury is sustained. They shall report systems of work or conditions which they consider may create risks to their own health and safety or damage to equipment and premises;
- Shall not, intentionally or recklessly, interfere with or misuse anything provided by the University in the interests of health, safety or welfare;
- Shall conform to all instructions, written and oral, given to ensure their personal safety and the safety of others;
- Shall at all times make full use of appropriate protective clothing and appropriate safety equipment and devices provided;
Shall maintain all work equipment in good condition, reporting any defects to their supervisor.

4.2 Head of Department (HoD)

The HoD is responsible for the adoption of the University Policy within their area of control. To achieve this they will ensure that they take the lead in driving the health and safety programme within their area of responsibility.

The HoD must demonstrate visible commitment by acting in the following way: -

- Accept their own responsibility in health and safety, and encourage colleagues to do the same;
- Set the local health and safety policy based on institutional requirements and their own assessment of the risks inherent in the work of their department. Through this mechanism, the HoD shall inform staff of their own responsibilities, the arrangements for the introduction and maintenance of measures designed to identify, assess, control and monitor risks, and the process of health and safety planning in the department;
- Appoint a Departmental Safety Officer (DSO) and other specialist Safety Officers if required by the work undertaken;
- Allocate the necessary resources, both in terms of time and financial resources, to staff appointed to carry out a health and safety role, particularly, but not limited to, the Departmental Safety Officer;
- Establish local consultative health and safety arrangements in the form of a Departmental Health and Safety Committee;
- Provide the necessary information, instruction and training to enable staff to perform their job in a safe manner;
- Make health and safety training a core element of departmental teaching at all levels;
- Ensure staff provide appropriate supervision of students, based on effective risk assessment of activities undertaken;
- Adopt relevant health and safety advice from University Health & Safety and from the DSO as appropriate;
- Encourage and consult with Trades Union Safety Representatives;
- Ensure that any matter brought to their attention by Safety Representatives is given prompt and appropriate attention;
 - Ensure that such matters are reported to the Vice President for Engineering for their information;
 - Bring to the President & Vice-Chancellor's attention any breach of statutory requirements which cannot be dealt with effectively at Departmental/Faculty level;
- Encourage and facilitate the attendance of appropriate members of the Department on relevant internal and external health and safety training events;
- Ensure that all members of the department undertake such training as is deemed mandatory;
- Provide as appropriate, correct protective clothing to all persons under their control;
- Devise and implement phased order of priority plans for expenditure of finance or effort to solve health and safety problems, which cannot be resolved at one particular time.
- Take personal action to immediately suspend or stop any activity that is dangerous or not carried out within departmental health and safety policy.
- So far as it is reasonably practicable, ensure all contractors engaged by the department are adequately supervised and conduct their work in accordance with:
 - The specified terms of contract;
 - Agreed method statements and risk assessments;
 - Statutory regulations and University approved codes of practice;
 - Avoidance of danger to University's employees, students or members of the public.

- Actively monitor health and safety performance by receiving regular updates on departmental health and safety related occupational ill-health issues/accidents/incidents and health and safety inspections/ investigations.

4.3 Departmental Safety Officer (DSO)

- Report to the Head of Department on all health and safety related issues.
- Report any breaches of Health and Safety policy to the HoD immediately.
- Maintain oversight of the implementation of the department's Health and Safety Policy, and all documentation and management systems that support it.
- Ensuring that members of the department are adhering to the policy through regular assessment of areas of work, both announced and unannounced.
- To document the outcomes of these assessments
- To report on the results of these assessments, whether good or bad, to the HoD and the subsequent Health and Safety Committee meeting. This will include, where appropriate, actions taken, and recommendations for policy updates.
- To provide a written report on recent activities and incidents to each Department Executive meeting
- To present a written report on recent activities and incidents to each Departmental staff meeting

4.4 All staff with supervisory duties

For the purposes of this policy, staff with supervisory duties are defined as:

- Academic Staff (included University Teachers) who have academic supervision responsibilities for students, both undergraduate and postgraduate.
- Academic staff who have line management responsibilities for research staff.
- Academic, professional or support staff (administrative and technical) who undertake day-to-day supervision of staff (e.g. Technical Team Leaders) and students
- Academic, professional or support staff who have formal line management responsibilities for support staff.

All supervisory staff must:

- Maintain a full and up-to-date understanding of the University and local Health and Safety Policies and understand and apply them within all areas under their responsibility and/or control.
- Ensure that their team members/people they are responsible for are operating in accordance with the University and local Health and Safety Policy at all times, as relevant to the work being performed under their direction or control.
- Ensure their staff/students are trained to enable them to identify a requirement for and then carry out suitable and sufficient risk assessments, and COSHH risk assessments, as necessary.
- Be responsible for initial review, assessment and development, and reviewer sign-off of risk assessments and COSHH forms produced by their team/group members to ensure they are fit for purpose and that they are updated and maintained as required by the EEE COSHH Policy.

- Provide guidance to their team members/people they are responsible for when they are developing procedures and creating associated paperwork (procedural documents, Risk assessments, and COSHH risk assessments)
- Ensure that they and their staff have been trained in the principles, operations and emergency procedures necessary for health and safety in the areas and environments in which they are working.
- Ensure the competence of individuals appointed to perform allotted tasks, and where necessary provide, or arrange for provision of, training in the necessary skill and knowledge areas to make those individuals competent.
- Ensure that safe-working practices are observed by all staff/students/visitors under their control and/or supervision, to create a safe working environment, at all times.
- Ensure that a suitable substitute is in place to provide supervision to team members if they are away from the office/laboratory for any period of time, and communicate this to anyone affected.

4.5 Local area managers

For the purposes of managing Health and Safety, The Departmental estate is divided in the six local areas listed in the table below. Each area has coherent set of activities and forms more or less contiguous space within one building or area. Each local area has a designated local area manager who has specific responsibilities on the development, delivery and monitoring of H&S practice within their local area. These individuals are selected by the head of Department for their intimate working knowledge of operations in their local area.

Area manager	Local area manager	Tel	e-mail
Nanoscience clean rooms	Ken Kennedy	25212	K.Kennedy@sheffield.ac.uk
Nanoscience remainder	Luke Marsden	25040	L.Marsden@sheffield.ac.uk
EMD Labs	Andy Race	25835	a.m.race@sheffield.ac.uk
Mechanical Workshop	Karl Rotchell	25857	K.A.Rotchell@sheffield.ac.uk
Portobello	Steve Marsden	25861	s.marsden@sheffield.ac.uk
Pam Liversidge Building (PLB)	Kirsty McNeil	26071	K.McNeil@sheffield.ac.uk

Their specific responsibilities of area managers are:

- To monitor the conduct of all area users in relation to H&S practice
- To intervene as appropriate, including immediate stopping of activities, which are deemed not to follow acceptable practice.
- To report any breaches of Departmental Health and Safety policy to the relevant supervisor, DSO and Head of Department.
- To make resource requests (both personnel and equipment) to the Head of Department to ensure that standards of H&S practice are maintained.
- To have oversight and act as a reviewer for any Standard Operating Procedures (SOP) within the local area.

Area managers have further specific responsibility in relation to COSHH as detailed in the separate EEE COSHH policy.

4.6 All Students

All students:

- Shall at all times, whilst they are on University premises or taking part in University activities, follow the Health and Safety Policy and comply with any health and safety instructions given to them;
- Shall not, without the consent of the member of staff in charge of the areas or activity, introduce any equipment for use on University premises, alter any fixed installations, alter or remove health and safety notices or equipment, or otherwise take any action which may create hazards for persons using the premises or employees of the University;
- Shall at all times, whilst in residence in University property, comply with all fire, safety and security procedures as laid down in the contract of residence;
- Shall not, intentionally or recklessly, interfere with or misuse anything provided by the University in the interests of health, safety or welfare;
- Shall conform to all instructions, written and oral, given to ensure personal safety and the safety of others;
- Shall use protective or specialist clothing as required and shall use all safety equipment available;
- Shall maintain all equipment in good condition, reporting any defects to their supervisor;
- Shall report all occupational ill-health issues/accidents/incidents/near misses, whether or not injury is sustained, to their supervisor or the member of staff in charge of the activity or facility.

4.7 Department Radiation Protection Officer (Ionising) (DRPO)

Current role holder: Prof Mark Hopkinson

The Radiation Protection Officer will advise on all aspects of radiation protection in the University, with particular reference to the statutory requirements relating to the Ionising Radiation Regulations 1999, together with approved codes of practice and guidance.

The Radiation Protection Officer will advise on all aspects of radioactive waste management in the University, with particular reference to the statutory requirements of the Environmental Permitting Regulations 2016.

The Radiation Protection Officer will co-ordinate arrangements for the safe ordering, storage, handling, use, transporting and disposal of radioactive substances.

4.8 Department Radiation Protection Officer (non-ionising) (DRPO)

Current role holder: Dr Jon Rigelsford

The DRPO shall provide advice on all aspects of the use of non-ionising radiations, with particular reference to the statutory requirements of the Artificial Optical Regulations 2010 and Control of Electromagnetic Fields at Work Regulations 2016, together with appropriate British Standards and other relevant guidance where statutory provisions have still to be enacted.

The Radiation Protection Officers are responsible to the Head of Department.

4.9 Department Biological Safety Officer (DBSO)

Current role holder: Mr Luke Marsden

The Departmental Biological Safety Officer will provide professional safety advice as needed to staff and students across the University in respect of biological and genetic modification work.

The Biological Safety Officer will:

- Act as Advisor to members of the department in all matters relating to biological safety including genetic modification experiments and the containment of potential hazards, and to provide liaison between the department and the Health and Safety Department.
- Liaise with the University Biological Safety Officer, to ensure that sufficient documentation of processes and associated risk assessments are in place and to provide HSE with such information as is required by applicable regulations should it be requested.
- Assist in the audits of Biological work undertaken in the department by the University Health and Safety Officer.
- Assist in the investigation of all accidents or incidents in laboratories in which genetic modification is taking place and take what action is necessary. Each accident/incident and the action taken must be recorded, together with the names of the personnel involved.
- Liaise with the DSO and Human Resources with regard to statutory health surveillance.

The Departmental Biological Safety Officer is responsible to the Head of Department.

4.10 Laser Safety Officer (DLSO)

Current role holder: Dr Rick Smith

The Laser Safety Officer provide expert knowledge on the use of Lasers within the Department. The responsibilities of the LSO are:

- Provide advice to users planning laser installations in matters of Health and Safety.
- Maintain an up-to-date register of lasers in the Department.
- Maintain an up-to-date register of trained users in the Department.
- Assess laser installations for compliance with good practice and appropriate legislation.
- Provide laser technical advice to the DSO and HoD to assist them in approving or otherwise Risk Assessments. Standard Operating Procedures or capital works.
- To keep up to date with legislation connected with the use of lasers and advise the HoD on any policy changes that might ensue.
- To liaise with central University laser safety staff on issues and inspections.

4.11 Technical specialisation roles

There are a series of roles, which are largely undertaken by members of technical staff, all of whom are members of the H&S Committee. These roles provide a focus for the following activities:

- Gases & Pressure systems – **Dave Morris**
- Personal Protective Equipment – **Stephen Dorwood**
- Lifting equipment – **Karl Rotchell**
- Work equipment – **Dianne Webster**
- Electricity at work – **Andy Race**

These responsibilities for these roles are:

- Make arrangements with DSO for periodic external audits as required.
- To provide a written report to the Departmental Health and Safety Committee.
- To remain up to date with practice and regulations in their area of expertise.
- Advise HoD on any resources required for the Department to maintain the high

4.12 Safety Inspection team

This team, drawn from a pool of staff, is under the direction of the DSO. Their responsibilities are:

- To undertake periodic areas inspections in line with the published schedule.
- To undertake unannounced areas inspections as required by the DSO and/or HoD.

5. OCCUPATIONAL HEALTH

The University Occupational Health provision is managed by Human Resources, and delivered through Health Assured Limited. Details of the University provision is available at:

<https://www.sheffield.ac.uk/hr/wellbeing/oh>

Guidance for referral by members of the Department are available at:

<https://www.sheffield.ac.uk/hr/wellbeing/referrals>

6. IMPLEMENTATION OF HEALTH AND SAFETY POLICY

This Section provides details of the implementation of the Department's Health and Safety Policy.

6.1 Health and Safety Committee

The terms of reference of the Department Health and Safety Committee are:

- To report directly to the Departmental Executive Committee via the DSO.
- To develop, consider and recommend Health and Safety related policies and procedures to the Departmental Executive Committee.
- To ensure that any agreed changes are actioned in a reasonable timescale, and that such changes are communicated clearly to the Department.
- To champion Health and Safety matters, helping the HoD to create a culture where awareness and reporting of health and safety issues is common place and managed proactively.
- To update and continually develop the Departmental H&S Policy on an annual, as well as responsive, basis to ensure that it covers the types of activity performed in the department, and reflects any changes in legislation/regulation at a higher level.
- To monitor and report on H&S processes, actions and activities within the department (including training compliance, incidents and near misses).
- To promote the Departmental H&S Policy across academic, technical and administrative team meetings, the Staff Student Forum, and departmental staff meetings and away days.
- To agree actions needed to address Health and Safety related concerns and to promote best practice.
- To identify H&S issues of a more serious nature, or which require significant operational or strategic change, to be escalated to the Departmental Executive Committee or direct to the HoD.
- To record and follow up, by way of formal minutes, any actions arising from discussion at either Departmental Executive or the Health and Safety Committee, relating to H&S issues, and to ensure that regular meetings of both groups are routinely scheduled and held.

- To provide regular communications to all staff on health and safety matters.

The full terms of reference document including Composition of the Health and Safety Committee is attached as APPENDIX 1

6.2 Departmental Health and Safety Management Structures and Policies

For the purposes of health and safety management any subsidiary of The University of Sheffield or any company in which Officers of The University of Sheffield may be legally regarded as the 'controlling mind' will be regarded as a 'Department' under this policy document.

The Head of Department is responsible to the Faculty Vice-President for the day-to-day management of health and safety issues in their areas of managerial responsibility. See also: Section 3, Statement of Responsibilities.

The primary vehicle for consideration of all Health and Safety is the EEE Departmental Health and Safety Committee. It is a formal requirement of the University Health and Safety Policy that all Departments have a designated Departmental Safety Officer; the allocation of time and duties of the Departmental Safety Officer being appropriate to the size and activities of the Department. In the case of EEE this is a full time role due to the research-intensive nature of the department and the high number of students.

The EEE Health and Safety policy is closely aligned to, and consistent with, the University Health and Safety Policy. There are requirements at department level for greater detail.

The Departmental Health and Safety Committee and the Departmental Safety Officer, who report to the Head of Department, will oversee health, safety and welfare matters within that area; liaising with the University Head of Health and Safety as required.

6.3 Tenants, Contractors and Partnerships

It is the responsibility of those University Officers entering into any arrangement or agreement on behalf of The University of Sheffield to ensure all health and safety responsibilities are clearly specified as an integral part of the arrangement. This must include arrangements for two-way communications of hazard identification, risk assessments and emergency procedures; particularly for activities on campus.

For departmental staff this means that any work requested directly from a third party, not through EFM, must be risk assessed

Where University staff will be working under the control of external agencies their line manager will be responsible for ensuring that a satisfactory assessment of all foreseeable risks has been carried out prior to the commencement of the activity.

The need for checks to be performed where any member of the department is going to be working outside the University, unless another part of the University (i.e.: HR) has already done so.

Need specific advice for when contractors are coming to work on specific kit (i.e.: SEREN ICP removal)- should they provide their own RA and COSHH or should we be providing?

7. HEALTH AND SAFETY PROCEDURES IN EEE

7.1 Health and Safety Induction and Training

7.1.1 New Staff

Automatic access to the online training system is available to all new staff with contracts of employment, University Associates (e.g. visitors with teaching responsibilities), and post-graduate researchers. The University stipulates that **Fire Safety training is MANDATORY for all staff and must be undertaken on an annual cycle**. All courses can be accessed once the individual has a Ucard.

All new staff must receive General Safety Induction Training from the DSO. In most cases, this will take place on their first day in their post. It is the responsibility of the DSO to initiate and arrange a time slot to undertake this induction. In line with the requirements for all staff in EEE, new staff must undertake the following **mandatory** online training:

- Fire and Emergency Procedure. FIRE
- Display Screen Equipment. Display Screen Equipment
- General Risk Assessment Techniques. (Under General Health & Safety) General Risk Assessments
- Manual Handling – The Basics. (Under General Health & Safety) Manual Handling
- Out of Hours working. Out of Hours (only if required)
- COSHH Training

7.1.2 New Undergraduate Students

The DSO will arrange to give a Health and Safety Induction lecture to all new Undergraduate students during “Intro week”. This is a timetabled slot and a register is taken.

7.1.3 New Taught Course Postgraduate Students

The Departmental Safety Officer will arrange to give a Health and Safety Induction lecture to all new Taught Course Postgraduate students. This is a timetabled slot and a register is taken.

7.1.4 New Research Postgraduates

Automatic access to the online training system is available to all new staff with contracts of employment, University Associates (e.g. visitors with teaching responsibilities), and post-graduate researchers. The University stipulates that **Fire Safety training is MANDATORY for all research postgraduate students and must be undertaken on an annual cycle**. All courses can be accessed once the individual has a Ucard.

The Department does not mandate any further courses for Postgraduate Research students, but expects them and their supervisor to consider training needs as required to suit the nature of their activities. It is expected that the following on-line training would be a de-facto minimum:

- Out of hours work requires completion of Out of Hours training.
- Risk assessment training should be undertaken in order to complete a risk assessment
- Display screen equipment if this is a regular feature of the research studies being undertaken

In addition, new starters will be given specific inductions in the areas in which they will be working.

7.1.5 Induction process

Any long stay visitors must be included in this process and the DSO informed as early as possible by the member of staff hosting the visitor in order to arrange a suitable time for a Safety Induction to take place. Access to the online training system can be arranged for casual staff, visitors (paid) and agency staff who are working in the Department for at least 2 months.

Short stay visitors [less than 2 months] should be inducted in the area that they are working in. The induction should cover fire and welfare arrangements. The induction should be recorded and the visitor should sign to say that they have completed the induction. Short stay visitors are not allowed to work out of hours unless supervised and a relevant risk assessment has been completed.

Cleaners should be given an induction to any laboratory or workshop area that they have to work in. As part of the induction topics that should be covered should include but not be limited to any areas that they should not enter, told about any personal protective equipment requirements (for example safety foot ware or laboratory coats) warned about any potential hazards, what to do if there is a spillage or leak, any signs to be observed, which bins to empty and surfaces they can clean.

7.2 Workplace Environment and Welfare Facilities

In accordance with the *Workplace (Health, Safety and Welfare) Regulations*, the University has a duty of care to ensure that the working environment is safe, clean, tidy, hygienic, and comfortable. Where required, this shall be achieved in a collaborative manner with Estates & Facilities Management and other Heads of Department who share the same work environment.

Specifically within the context of the Regulation stated above - The HoD shall:

- ensure buildings and workspaces (including common areas) are fit for purpose, are in a good state of repair, and satisfy the requirements of the *Building Regulations*, including (but not limited to) construct, doors, windows, etc.;
- give due consideration to access/egress and facilities for people with disabilities (except where health and safety legislation takes precedence over disability legislation);
- ensure a reasonable workplace temperature (minimum of 16°C) except where significant physical exertion is required or where hot processes take place (in which case the minimum temperature should be 13°C) – there is no legal upper temperature limit but control measures should be implemented to mitigate against the effects of higher temperature extremes;
- ensure the provision of suitable and sufficient lighting (including emergency lighting);
- ensure that enclosed work environments are ventilated by a sufficient source of fresh air, including the provision of extraction systems to remove contaminants from the air;
- ensure noise levels are controlled so as not to cause harm;
- ensure the provision of safe furniture, workstations, fixtures and fittings including sufficient safe storage;
- ensure housekeeping is kept to a satisfactory standard with regard to cleanliness, hygiene and tidiness;
- ensure the provision and upkeep of sufficient welfare facilities including adequately resourced toilets (with sanitary conveniences), and food/drink preparation areas with a supply of clean fresh drinking water;
- where required, the provision of specialist welfare facilities (i.e. scrub down areas, showers, etc.), and areas for individuals to change in/out of work clothes including accommodation of regular/work clothes when not being worn;
- the provision of rest facilities away from workstations and areas, with specific provision made for pregnant women and/or nursing mothers;

- ensure safe access/egress and traffic routes for pedestrians.

The Department Safety Officer shall:

- monitor workplace environment and welfare facilities to ensure the upkeep of the above arrangements, and report any deficiencies to the Head of Department

All Department Staff shall:

- report any issues or concerns with regard to the workplace environment or welfare facilities to the DSO;
- not abuse welfare facilities, and only use them in manner for which they are intended.

7.3 Fire Safety

In accordance with the *Regulatory Reform (Fire Safety) Order*, the University has a duty of care to ensure the safety of individuals from fire. In addition to staff and students, this may include visitors, contractors, the general public and the community at large.

Fire can result in catastrophic loss of life, injury, damage/loss to property or inventory, and disruption to academic activities. An increased risk exists within the Department due to the nature of work taking place and the flammable substances stored on site.

University fire safety arrangements are the joint responsibility of the Fire Safety Team and Estates & Facilities Management in-conjunction with the Head of Department. Where areas of the Department are shared with another faculty/department, a collaborative approach shall be taken between the respective Heads to mitigate against the risk of fire. Ultimately, it is the collective responsibility of everybody to prevent fires from occurring.

Specifically within the context of the legislation stated above - The Head of Department shall:

- ensure compliance with all fire safety arrangements as directed by the Fire Safety Team and Estates & Facilities Management;
- ensure fire safety is a consideration when risk assessments are undertaken by the Department, and that all control measures are implemented and adhered to;
- ensure the preparation of a Personal Emergency Egress Plan (PEEP) for staff or students with visual, auditory, cognitive or mobility problems – for visitors, a General Emergency Egress Plan (GEEP) shall be prepared;
- provide sufficient Fire Marshals in each area/floor and to provide the necessary time for them to attend training;
- identify activities that present a higher risk of fire, and provide the necessary time for staff to attend training in the use of fire fighting equipment;
- inform the Fire Safety Officer if there is a notable increase in staff/student occupation of the Building, where there is a significant change in building use, or a specific process that results in an increased risk from fire;

The DSO shall:

- support the HoD to carry out fire safety related duties;
- monitor risk assessments to ensure they take account of fire hazards;
- report any fire safety concerns to the HoD and University Fire Safety Team;

Managers/Supervisors/Academics shall:

- ensure that all staff under their control complete the University's mandatory [fire safety training](#) within their first week of starting at the University, and that refresher training is undertaken annually;
- ensure that all staff/students under their control are provided with the necessary information and instruction with regard to evacuation routes, exit doors and assembly points for the building they are in;
- identify and arrange completion of a PEEP for those members of staff or students who have visual, auditory, cognitive or mobility impairment (including those with temporary circumstances, for example, someone with a broken leg using crutches) and communicate the findings to relevant staff.

Fire Marshals:

- There will be a minimum two nominated fire marshals for each level in all relevant buildings who will undertake online training and refresher training as required.
- Members of the Fire Marshal team will be assigned to stand by the fire doors once their area is clear to prevent people entering the building before the fire alarm has been cancelled.

All Department Staff shall:

- complete [fire safety training](#) within their first week of employment, and refresher training annually. This is mandatory requirement in EEE and failure to comply may result in exclusion and/or disciplinary action;
- take all reasonable care to prevent the risk or spread of fire;
- make evacuation a priority and not fight fires unless trained to do so;
- keep all fire exit routes and final exit doors unobstructed (both front and rear), and not prop/wedge fire doors open;
- not move or tamper with anything provided for fire safety (i.e. smoke/heat detectors, fire extinguishers, etc.);
- not smoke inside any University building;
- familiarise themselves with evacuation procedures, and comply with all University fire safety arrangements
- Dial 4444 in the event of a fire.

7.4 Fire Safety Arrangements

On hearing a continuous alarm all occupants must:

- Leave the building by the nearest signed exit route.
- Do Not re-enter the building until the all clear has been given.
- On discovering a fire must raise the alarm by:
 - Breaking a fire alarm call point
 - Shouting "Fire"
 - Calling 4444 on an Internal phone and reporting:
 - The exact location of the fire
 - Whether there are any casualties
 - Whether there are any special hazards present

- Not attempt to tackle the fire, using an appropriate fire extinguisher, unless it is safe to do so.

7.5 Incident reporting

All incidents, including accidents, near misses or dangerous occurrences taking place within the Department, or incidents to staff/students whilst undertaking University activities elsewhere, must be reported as soon as possible after they occur via the University's online portal Accident Incident and near miss Reporting (AIR) on your MUSE account. In accordance with the *Reporting of Injuries, Diseases and Dangerous Occurrence Regulations (RIDDOR)*, some incidents may also require reporting to the enforcement authority (the Health and Safety executive). This will be undertaken by the University Head of Health and Safety.

Accordingly, the Head of Department shall:

- following an incident, ensure a review of relevant risk assessments and safe working procedures is undertaken, and the implementation of any additional control measures to prevent reoccurrence.

The Department Safety Officer shall:

- following an incident, secure the area and acquire any evidence to support the investigation (i.e. notes, photographs, etc.), and any eye witness testimony;
- report any absence due to a work-related incident directly to the University Health and Safety Department
- conduct local accident investigations and report findings to the Head of Department and the University Health & Safety Department.

The prevention of accidents in the University is the responsibility of everyone.

8. ACTIVITY SPECIFIC POLICIES

8.1 Control of Substances Hazardous to Health (COSHH)

The Department has a separate and detailed COSHH Policy that is available at:

https://www.sheffield.ac.uk/polopoly_fs/1.740490!/file/EEE-CoSHH-POLICY-231017-3.pdf

8.2 Undergraduate Laboratory Teaching

First and second year undergraduates receive laboratory based teaching in the Diamond building under the auspices of the Multidisciplinary Engineering Education team. The health and safety policy for these activities is available at:

<https://www.sheffield.ac.uk/diamond/engineering/hs>

In the 3rd and 4th year students do enter the labs to undertake their projects.

- Universities have a legal duty to provide '*such supervision as is necessary*' to ensure the health and safety of students.
- This duty is delegated to the supervisor for student projects in Years 3 and 4. Supervisors should appoint a suitably qualified person to deputise for them during times of their absence or unavailability.
- No undergraduate student can carry out experimental work without the supervision of a member of staff. This does not mean constant attendance; it does mean that the supervisor is satisfied that the absence of direct supervision does not constitute a hazard. A vital stage in defining the level of supervision necessary is to carry out a risk assessment.
- The supervisor and student should conduct a risk assessment at the start of the project to ensure that any hazards are identified. Suitable Project Risk Assessment forms are distributed to students as part of their registration packs. The steps to be followed are described on the [Risk Assessment](#) page. The necessary safety procedures should be written down in all circumstances. Project students are now required to submit a completed risk assessment form as part of their Interim Project Report even if this shows no risk has been identified.
- All equipment and apparatus developed and constructed within the Department must be checked to ensure that it conforms to all relevant safety requirements. Specific advice is given on the [Construction of Equipment & Apparatus](#) page (see below 7.3). If circuit construction involves considerable soldering, the use of extraction facilities is recommended, see 'Facilities for the extraction of solder fumes' on the [Personal Protective Equipment](#) page (see below 7.4). Outline information about specific types of hazard is given on other appropriate pages.
- Regular checks should be made by the student's supervisor to ensure that the procedures are being followed. Changes in experimental method require a fresh assessment of risk. Students should be informed that everyone has a legal responsibility not to endanger themselves or others either through their actions, or lack of action.

8.3 Construction of Equipment and Apparatus

All equipment or apparatus constructed in the Department must be tested before use to ensure that it complies fully with all the relevant safety legislation. This applies to equipment or apparatus constructed as part of undergraduate or research projects and applies equally to electronic circuits, electrical machines, mechanical devices, etc...

It is important to seek advice at an early stage, preferably before the start of construction (see other relevant sections of this book), and this can be obtained from:

Type of work	Contact name	Room	Tel. Ext.
Electronic systems	Mr Ian Wraith	F146	25170/25864
Electrical and energy storage systems, high voltage apparatus	Mr Andy Race	C130	25835
Electrical machines & rotating apparatus	Mr Andy Race	C130	25178
		C130	25835
Mechanical systems and materials, woodworking	Mr Karl Rotchell	HUT 1810	25437
Lasers and optics	Dr Rick Smith	E150e	25179
X-ray radiation	Prof Mark Hopkinson	F164b	25385
Microwave radiation	Dr Jon Rigelsford	P/C 27	25584
Hydraulic & pneumatic supplies/services	Mr Karl Rotchell	HUT 1810	25437
Gases	Mr Dave Morris	2.08 (NC)	25866

8.4 Personal Protective Equipment

Personal protective equipment should not be regarded as a substitute for other methods of controlling risks to health and safety. Use of other methods, e.g. engineering controls, safe systems of work, etc., must be considered first. The Department provides all relevant Personal Protective Equipment if it is considered necessary, or is covered by separate legislation on specific hazards. Examples of the equipment available not covered by other legislation are:

- U.V. proof goggles and spectacles
- Light-restricting spectacles
- Welding masks
- Gloves used for manual handling to protect against cuts, knocks, scrapes etc.
- Gloves used to handle hot objects
- Gloves used to handle extremely cold objects
- Welding aprons
- Welding gaiters
- Footwear to protect against falling objects and knocks

If you think you, or anyone else, require Personal Protective Equipment for any of your activities then seek guidance and information from [Stephen Dorward](#) or the [Departmental Safety Officer](#).

If you feel that the Personal Protective Equipment provided is not suitable for your individual use, e.g. ill-fitting, do not commence your activity and contact [Stephen Dorward](#) or the [Departmental Safety Officer](#).

Facilities for the extraction/ filtration of solder fumes

If you need to carry out prolonged soldering (electronic/electrical components, wiring etc.) you should contact [Ian Wraith](#) in the Electronics Workshop (George Porter, room C32, tel. 25864) to enquire about the facilities available for the local extraction/filtration of solder fumes.

If you are in any doubt about what constitutes prolonged, then do not start soldering and contact [Ian Wraith](#) in the Electronics Workshop.

9. APPENDICES

APPENDIX 1 - MEMBERSHIP OF THE EEE HEALTH AND SAFETY COMMITTEE

Health and Safety Committee

Membership and Terms of Reference

Members

Chair & Head of Department	<i>Prof Geraint Jewell</i>
Departmental Safety Officer	<i>Mrs Dianne Webster</i>
Admin Manager	<i>Mr Luke Marsden</i>
Technical Manager	<i>Mr Luke Marsden (interim)</i>
Radiation Safety Officer (Ionising)	<i>Prof Mark Hopkinson</i>
Radiation Safety Officer (non ionising)	<i>Dr Jon Rigelsford</i>
Laser Safety Officer	<i>Dr Rick Smith</i>
Biological Safety Officer	<i>Mr Luke Marsden</i>
Electricity at Work Regulations	<i>Mr Andy Race/Mr Ian Wraith</i>
Personal Protective Equipment	<i>Mr Stephen Dorward</i>
Lifting Equipment (LOLER)	<i>Mr Karl Rotchell</i>
Gases & Pressure Systems	<i>Mr David Morris</i>
Cryogenic liquids & gases	<i>Mr Jon Milner</i>
Risk Assessment/COSHH	<i>Mrs Dianne Webster/Mr Luke Marsden</i>
Disability Liaison Officer	<i>Mr Neil Powell</i>
Display Screen Assessors	<i>Mr Fahmi Mohammad/Mrs Dianne Webster</i>
Safety Inspection co-ordinator	<i>Mrs Dianne Webster</i>
Manual Handling trainer	<i>Mrs Dianne Webster</i>
Manual Handling Assessor	<i>Mr Stephen Dorward</i>
Work Equipment	<i>Mrs Dianne Webster/Mr Luke Marsden</i>
Area representatives:	<i>Dr Ken Kennedy (Nanoscience Clean Rooms)</i>
	<i>Dr Shahab Nejad (Willenhall)</i>
	<i>Dr Andy Race (EMD)</i>
	<i>Mr Steve Marsden (Comms)</i>
	<i>Mr Paul Haines (SMD)</i>
	<i>Mrs K McNeil (PLB)</i>
	<i>Mr Karl Rotchell (Mechanical Workshop)</i>
	<i>Dr Ian Ross (Fegtem)</i>
	<i>Mr I Wraith (Electronic Workshop)</i>
Representatives from UoS Health and Safety Services	<i>Mr A K Johnstone, Mrs B Gouldsbrough</i>
Student Representatives	<i>TBC</i>

Secretary

TBC

Frequency

3 times a year minimum

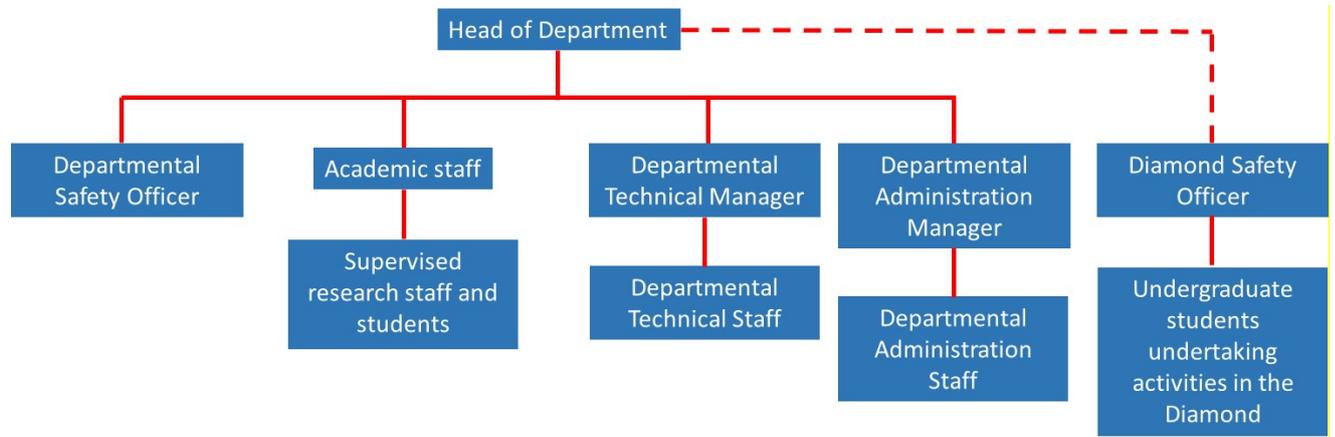
Terms of Reference

- To report directly to the 6 weekly Departmental Executive Committee via the DSO.
- To develop, consider and recommend Health and Safety related policies and procedures to the Departmental Executive Committee.
- To ensure that any agreed changes are actioned in a reasonable timescale, and that such changes are communicated clearly to the Department.
- To champion Health and Safety matters, helping the HoD to create a culture where awareness and reporting of health and safety issues is common place and managed proactively.
- To update and continually develop the Departmental H&S Policy on an annual, as well as responsive, basis to ensure that it covers the types of activity performed in the department, and reflects any changes in legislation/regulation at a higher level.
- To monitor and report on H&S processes, actions and activities within the department (including training compliance, incidents and near misses).
- To promote the Departmental H&S Policy across academic, technical and administrative team meetings, the Staff Student Forum, and departmental staff meetings and away days.
- To agree actions needed to address Health and Safety related concerns and to promote best practice.
- To identify H&S issues of a more serious nature, or which require significant operational or strategic change, to be escalated to the Departmental Executive Committee or direct to the HoD.
- To record and follow up, by way of formal minutes, any actions arising from discussion at either Departmental Executive or the Health and Safety Committee, relating to H&S issues, and to ensure that regular meetings of both groups are routinely scheduled and held.
- To provide regular communications to all staff on health and safety matters.

Reports to: EEE Executive Committee and Head of Department

Updated 23 October 2017 (membership revised)

APPENDIX 2 - ORGANISATIONAL STRUCTURE OF HEALTH AND SAFETY MANAGEMENT
in EEE



APPENDIX 3 - DUTIES OF DEPARTMENTAL SAFETY OFFICERS

- Undertake health and safety training to an appropriate level of competence, thus enabling them to discharge their duties;
- Be fully familiar with the University's Health and Safety Policy and assist the Head of Department to develop, implement and periodically review a local policy and procedures;
- Provide health and safety advice to the Head of Department and other members of staff;
- Undertake regular health and safety inspections (with Trades Union Safety Representatives, as necessary) and report findings;
- Ensure that occupational ill-health issues/accidents/incidents and near misses are reported and investigated (with direct involvement as necessary). In accordance with the University's Accident and Incident Investigation Policy and Procedures. Communicate findings of investigations and ensure that recommended action is carried out;
- Ensure the necessary provision of health and safety training (including induction) to staff within the Department either by direct involvement or by monitoring provision;
- Disseminate health and safety information and reports to appropriate staff and students;
- Monitor that adequate precautions are taken in relation to any special hazard in, or about to be introduced into the Department, with advice from the University Health and Safety Office where appropriate;
- Monitor that all plant, equipment and processes within their area are maintained in a safe condition and in compliance with appropriate statutory requirements;
- Maintain adequate health and safety records where appropriate;
- Monitor housekeeping within the Department to ensure that a high standard is maintained;
- Monitor that adequate, suitable protective clothing and equipment is available and used as required;
- Ensure that systems are in place to provide and maintain adequate first aid facilities;
- Monitor that safe working practices based on risk assessment are adopted, especially for postgraduate work (in view of the fact that postgraduate students generally work without direct supervision);
- Act with the delegated authority of the Head of Department on health and safety matters of urgency;
- Participate in audits carried out by University Health & Safety as necessary.

APPENDIX 4 - OUT OF HOURS WORKING

All staff, graduate students and visitors must sign-in at the Porters Lodge of the relevant building when working in the Department outside of the hours 8.00 a.m. to 6.00 p.m., Monday to Friday. **Undergraduates are not normally permitted to work out-of-hours.**

No practical or experimental work where there is a risk of an accident should be undertaken out of hours. Normally, work out-of-hours should be restricted to library work, computing, writing reports and making non-risk observations.

Anyone working out-of-hours must:

- Submit a Permission form (available [here](#)), approved and signed by their Supervisor and returned to the Departmental Safety Officer, before permission can then be granted.
- Have completed all training required by EEE and this is up to date:
 - 1 Fire Awareness
 - 2 Out of Hours Hazards and Risk Awareness
 - 3 Display Screen Equipment (DSE)
 - 4 General Risk Assessment Techniques
 - 5 Safe Manual Handling
- Have read and understand the potential hazards and their control measures in the Out of Hours generic risk assessment (RACIE ID 3389 for Mappin, ID 3680 for North Campus and ID 3681 for Portobello)

Other important points to note:

- Out of hours access is not granted automatically, and permission must be sought using the Permission form.
- Completed forms are to be handed to the DSO.
- The application can take up to 7 working days to be approved and actioned.

Please note that generic risk assessments are for offices and workrooms not labs/experimental work!

[Department of Electronic and Electrical Engineering Policy on access to EEE buildings when accompanied by children out of hours.](#)

Normal working hours - In line with University guidelines, this is deemed to cover weekdays 8am-6pm excluding any designated days on which is University has been deemed to be closed, e.g. public holidays.

The University has guidance on the presence of children (which are defined as being under 18 years old) in University buildings during normal working hours. A copy of this document is available at:

<http://safety.dept.shef.ac.uk/guidance/childrensafety.pdf> (and in Appendix 5, section 5.1 below)

The Department policy follows this guidance in full and this document should be consulted if you are planning to access any Departmental buildings when accompanied by children during normal working hours.

Out of hours - This is deemed to cover all other times which are not designated as normal working hours.

It is recognised that all categories of staff may be required to call into the Department during out of hours periods to collect documents or items, undertake very minor tasks such as signing papers, approving costings, submitting assessment grades etc, and that this will on occasions coincide with times at which they are accompanied by children. In order to allow staff to gain access with children out of hours for brief periods, the Department has put in place the following policy in consultation with University Health and Safety:

- The visit should not exceed 1 hour in total duration and only be for the purposes of entering an office like room.
- Staff should not enter a room which could reasonably be regarded as a laboratory.
- Staff should not leave children unaccompanied at any point, even for the briefest of periods.
- All staff entering the building out of hours with children must have a valid (i.e. completed and up to

date) Out of Hours training. You can consult your individual training record by logging in at:

<https://hs.shef.ac.uk/>

- In buildings with signing in facilities, staff should include the number of children with them using a means that is unambiguous in terms of determining the number of individuals entering the building.

For the avoidance of doubt, the Department does not permit staff to spend extended periods working in the Department out of hours when accompanied by children, however pressing the need to carry out such work.

A copy of this section of the policy has been lodged with the Porters Lodges for the Portobello Centre and North Campus. If you have any queries regarding this policy or any difficulties arising from it, please contact Dianne Webster in the first instance.

APPENDIX 5 - MISCELLANEOUS HEALTH AND SAFETY ITEMS

5.1 Children on University Premises

The out of hours policy above is in addition to the University's Policy on children being present on University premises which are outlined below.

Many staff and students combine parenting and work or educational responsibilities and this means that there are occasions when they may wish to bring their children onto University premises. On these occasions it must be borne in mind that the University is an institute of adult learning and the buildings and grounds of its premises are not designed with children in mind.

Valid Reasons for Children or Young Persons to be on University Premises

- When attending University operated crèche, playschool, nursery school or sporting facilities.
- When on visits organised by the University, schools, departments or other recognised bodies, where significant risks associated with planned activities and foreseeable incidents must be assessed.
- When on school organised "work experience" periods with specific departments, where significant risks associated with planned activities and foreseeable incidents have been assessed and safe working procedures produced if appropriate. In each of these situations satisfactory arrangements must be in place to ensure adequate induction and supervision of the children and activities undertaken by the relevant University (department or section), OR event organiser. In all other situations, the presence of children on University premises is discouraged and should only occur exceptionally, and then only in low risk work areas and where their presence does not disrupt the normal operation of the University. Examples would include: -
 1. Brief social visits by parents with newborn babies or young children.
 2. Accompanying parent to specific ceremonies or events, whether public or private, not involving hazardous activities, areas or equipment.
 3. Accompanying parent (University employee) to work on a brief visit, e.g. when visiting for short periods to pick up work or carry out a short term low risk activity.

Accompanying parent (University employee) to work for short periods due to childcare difficulties or similar into a low risk environment until alternative arrangements can be made, but only at the discretion and direction of the Head of Department. As stated previously University premises are not designed to accommodate children and the precautions in place to control risks for the normal population are unlikely to be appropriate for children, due to their physical size, inquisitiveness, immaturity or inexperience. Children should not be brought into the workplace for extended or frequent periods or as an alternative to making proper arrangements for their care - this could include after-school activities, arrangements with other parents /childminders or flexible working arrangements.

In the event that children are brought into work premises, then: -

1. The parent must consult with their Head of Department about the acceptability of children being present, even for short periods.
2. The parent will be responsible at all times for the supervision of their child(ren) during the period the child(ren) are on the work premises and will never leave them unattended; and will be responsible for exercising sufficient supervision to prevent any hazardous situation from arising.

3. Children must not be allowed to disrupt the normal operation of the work area or the work of other employees.
4. Children must only be allowed into low-risk areas and must never be allowed to enter any area where hazardous activities are being undertaken, hazardous equipment or hazardous substances are being used or if their presence could cause harm to the child(ren).
 - Children must not be allowed to touch any work-related equipment, article or substance or item of waste deposited in a bin or other waste receptacle.
 - The Head of Department, Health & Safety, Security and the Building Facility Manager can instruct the parent to remove the child(ren) immediately from the work area.
 - Children under 16 years of age must not be allowed to ride on the Arts Tower Paternoster and must be accompanied whilst using any other University lifts.
 - In the University's Libraries children under 16 years of age must be accompanied by a parent or responsible adult.

5.2 Waste Disposal Routes

Although not directly an issue of safety in many cases, waste must be disposed of in a correct manner. There are several waste streams and you must put your waste into the correct stream. All laboratory workers must undertake the University's waste disposal training, which can be found at <http://www.waste.shef.ac.uk>.

i) General waste

Black sack – cleaner removed waste, all non biological or non contaminated waste; for example paper, paper towels, non hazardous chemical containers.

General rule of thumb: if the item looks as though it has come from a laboratory it should not go in the general waste bins.

ii) Hazardous waste

If you have excess hazardous substances that need to be disposed of, or you have waste containing or contaminated with, HS that requires disposal you should contact the DSO with a full description of what you have, how much you have and where it is. The DSO will liaise with the local technical support team for a hazardous waste collection to be made, through the University Health and Safety Office.

iii) Sharp Waste

Some work will require the use of a blade, needle or other similar implement that may be considered as a stabbing/cutting risk if it is placed in a normal waste bag. All sharps should be placed in a specially designed sharps bin. These usually have a lid with cut outs to allow safe removal of blades and hypodermic tips from a holder without the need to re-sheath.

Yellow/orange bin – any sharps other than those contaminated with medicines.

iv) Solvent waste

As a consequence of the implications of the Control of Pollution Act, 1974, certain arrangements concerning the collection of used solvents have to be formalised. It is not permitted to pour solvents down drains. Solvents may be mixed in correctly labelled Winchester in accordance with the categorisation set out below. This categorisation is common throughout the University.

- Category X- All halogenated solvents or mixtures containing halogenated solvents.

- Category Y- All non-halogenated solvents which are non-acidified.
- Category Z- Oils (non PCB containing material)

v) Waste Electronic and Electrical Equipment (WEEE) Waste

WEEE waste covers a wide range of household and professional electrical and electronic products. Comprehensive guidance on what constitutes WEEE waste is available at:

<https://hs.shef.ac.uk/attachments/313?updated=1424353542>

WEEE waste cannot be disposed of along with normal waste. The current WEEE legislation requires the University to separate out WEEE waste. The University has an institutional level system for disposing of computers, PC peripherals and historic WEE waste. All other WEEE must be disposed of by the Department. For all WEEE waste, please contact Ian Wraith in the Electronics Workshop (Ext. 25864) for advice, collection and to arrange disposal through the Electronic Workshop in line with University policy.

University guidance on WEE is available at:

<https://hs.shef.ac.uk/attachments/301?updated=1424353616>

vi) Biological Waste

Currently we produce very small quantities of Biological waste through the work of Prof Matcher's group. This waste is currently entering the waste disposal route for Biological waste through the Kroto Research Institute. Waste is placed in a sealable yellow Limb Bin for disposal by incineration. We produce no GM waste at this time.

5.3 Lone working

Lone working within EEE is not encouraged, but may be permissible under very specific circumstances after a detailed risk assessment has been performed.

Employers have a duty to assess the risks faced by lone workers to determine: -

- Whether the work can be done safely by an unaccompanied person, and;
- What arrangements will be required to ensure that the person is not exposed to greater risks than employees who work together.
- There is no clear definition of "Lone workers" but there are a large number of occupations that tend to work on their own. Examples are: -
 - Doctors, district nurses, milkmen, salesmen, postmen, meter readers, maintenance men, lorry drivers.
 - Less obvious examples include Home workers, mobile staff, teachers and lecturers, maintenance men on large industrial sites, security staff, cleaners, home visitors, etc.
- However, most people at some time during their normal work activity will be engaged in a solo activity out of sight or sound of others. Similarly, someone has to be first to arrive at work and someone will be the last to leave. So concentrating on "aleness" is unnecessarily limiting and the assessment of who is a lone worker must be based on those where the risks are higher, or those who work alone for considerable periods.
- Legislation does not prohibit lone working in a general sense, although there are some types of work which require supervision, e.g. where young people are undergoing training, where work on live electrical equipment is being performed, or work under the Construction (Health, Safety & Welfare) Regulations.

The following "Lone worker checklist" should help you assess the risks presented.
[https://hs.shef.ac.uk/documents?utf8=%E2%9C%93&q\[keyword_search\]=lone&q\[category_id_eq\]=&q\[document_category_id_eq\]=&bookmarked_only=](https://hs.shef.ac.uk/documents?utf8=%E2%9C%93&q[keyword_search]=lone&q[category_id_eq]=&q[document_category_id_eq]=&bookmarked_only=)

5.4 Disability (permanent and temporary), Pregnant and Young Workers

People with certain physical disabilities or health problems may be at greater risk from particular activities than would otherwise be the case.

- Staff and students with physical disabilities, or health problems which they feel could in some way put them at increased risk in the workplace, are encouraged to discuss the situation with their Manager/Supervisor/DSO.
- Supervisors/Managers may wish to seek advice where appropriate.

Issues of a sensitive nature will be treated with the utmost confidentiality.

Certain work activities and environments may adversely affect the health, safety and/or welfare of new and expectant mothers and/or their child (new or as yet unborn).

- New and expectant mothers who feel that their or their child's health, safety and/or welfare may be put at risk by their work activities and/or environment are encouraged to discuss the situation with their Manager/Supervisor in the first instance.
- They may seek further information from the DSO if they feel that issues have not been considered correctly or to their satisfaction.
- Females who are pregnant **must not** handle suspected carcinogens: the risk of teratogenic effects is greatest in the early stage of pregnancy.
- Females who work with known or suspected carcinogens and who are contemplating pregnancy, should seek advice from their Manager/Supervisor.

Young people may need closer supervision depending on their level of experience, competency and maturity, and the nature of the work. For instance, a school placement scheme work experience person will need constant supervision.

5.5 Driving for Work Purposes

Whilst not specifically a H&S issue, driving for work purposes does present a number of hazards.

- When driving for work you must ensure that you have insured your car for business use and that you have shown your documents to the staff in the EEE Finance Office (S27, 3 Solly Street).
- Make sure that you don't drive when tired or under the influence of alcohol, medicines or other substances that may affect your ability to drive safely.

5.6 Bicycles in University Buildings

Bicycles are not permitted within any University buildings. Cycle users should make use of the proper cycle parking facilities available at strategic locations throughout the campus. Small 'folding' bicycles, when folded, may be brought into buildings provided that they are stored so that they do not cause an obstruction to other building users.

5.7 First Aid (arrangements and training)

Before approaching casualty(ies) check that it is safe to do so. Render First Aid if possible, and send for a Departmental First Aider. If necessary, call an Ambulance by contacting the University Emergency Control Centre, internal telephone number **4444**.

The staff members in the Department with approved First Aid training (at the time of going to print) are listed below:

First Aiders

Name	Room No.	Telephone
George Porter		
Tom Templeman*	C32 Electronic Workshop	2 5906
New Caledonia		
David Snowden	Hut 1810	2 5437
David Miller	Hut 1810	2 5437
Sam Marples	Hut 1810 or C37 (George Porter)	2 5437
3 Solly Street		
David Stone	S14	2 5046
Dan Gladwin	S11	2 5849
Amanda Burnett	S8	2 5897
Melanie Tennant	S8	2 5587
Portobello Building		
Stephen Dorward	B09	2 5365
Tim Good*	Portobello C34d	2 5888 or 07904 098435
Pam Liversidge Building		
Nanoscience Building		
Paul Haines	Nanoscience 2:08	2 5871
Kenneth Kennedy	Nanoscience 2:05	2 5212
Saurabh Kumar*	Nanoscience 2:05	2 5212
Rob Airey	Nanoscience 2:09	2 5826
Yaonan Hou	Nanoscience 2:07	2 5911 or 0754 488 6220
Jon Milner	Nanoscience 2:08	2 5866 or 07540121829
Yipin Gong	Nanoscience 2:07	2 5166 or 07590189225
Rob Richards	Nanoscience 1:04	2 5816

*Responsible for keeping contents of boxes up to date. Please report missing items to those in your area for replenishing.

An up to date list of qualified First Aiders is posted inside each First Aid Box.

First Aid Boxes

A first aid box can be found in each of the following rooms:

George Porter

- C floor Kitchen
- D floor Kitchen
- E floor Kitchen
- F floor Kitchen
- F13
- C37
- A35
- G23

EEE Mechanical Workshop - 'New Caledonia' (Limited Access)

3 Solly Street

- Kitchen on Levels 1, 2 and 4

Portobello

- Porters Lodge
- C34 (Limited Access)
- 1st Year Teaching Lab (Limited Access)
- 2nd Year Teaching Lab (Limited Access)
- C floor kitchen

Nanoscience & Technology Building

- Reception
- Level 1 Clean Room Corridor (Limited Access)
- Level 1 Changing Room (Limited Access)
- Semi-clean Room (Limited Access)

All accidents and dangerous incidents, including those requiring first aid treatment, and / or use of the First Aid cabinets around the Department, must be reported [online](#) and should also be reported to the DSO.

All "near misses" or suspected hazards should also be reported.

5.8 Manual Handling

The majority of tasks involve some level of manual handling, e.g. a couple of reams of photocopier/printer paper weigh around 5Kg.

If there is some risk of injury from manual handling, then a task assessment must be made. It should be noted that assessments should only be done by those individuals who have received the appropriate manual handling assessment training.

- Steps must be taken to reduce the risk to the lowest reasonable practicable level.
- Avoid the need for manual handling as far as reasonably practicable.
- Protective measures should be observed at all times, e.g. the wearing of gloves, eye protection or protective footwear.
- Make full and proper use of equipment provided to aid manual handling.
- Always practice good handling techniques.
- Seek assistance, it may be helpful to draw on the knowledge and expertise of others.

The DSO keeps copies of task/risk assessment forms and other relevant information to help anyone

involved in manual handling, and is the person to contact should you need assistance in this area. An [online course](#) is available for lifting loads under 5Kg only. In addition, [the DSO](#) is able to deliver Manual Handling training to staff for loads greater than 5kg.

Safety Services recommend training the trainer. Most manual handling in the department is done by the workshop and they have all attended the relevant training. [Dianne Webster](#), [David Morris](#) are Manual Handling Assessors and can advise.

A complete list of available department lifting aids can be obtained from [Dianne Webster](#) (tel. 25859)

5.9 Good Laboratory Practice (GLP)

GLP should be observed in laboratories at all times as a minimum standard.

- No eating or drinking in any laboratory.
- Wear a lab coat (or equivalent) and appropriate safety wear (see COSHH information).
- Wear area appropriate personal protective equipment.
- Samples, reagents, bottles and containers should be **CLEARLY** labelled with:
 - o Chemical name, concentration and solvent.
 - o Contact name.
 - o Preparation date.
 - o Estimated dispose by date.
 - o Hazard Information.
- Store chemicals appropriately.
- All Winchester containing chemicals (e.g. acids, solvents etc) must be transported in a Winchester carrier within the lab. Refer to local rules for specific details as some areas (i.e.: clean rooms) only allow certain staff members to transport and decant chemicals.
- Check fume cupboards are working correctly before use. If in doubt ask a member of the Technical Support Team to check with an anemometer.
- Acids should always be added to water (never the reverse) when mixing.
- Clean up all spillages immediately. Refer to local rules for Acids and Alkali spills.
- Keep the laboratory clean, tidy and safe. Remember that other users, such as cleaners, may enter and they may not be aware of some hazards.
- All waste must be disposed of following the correct waste disposal route (see 5.2).
- Acids/alkali spills –see 5.11.
- Wash hands before exiting labs. In work areas where there is no hand wash facility wash hands before eating.

5.10 Acid/Alkali and Solvents

- All work with acids/alkalis must be performed in designated acid benches (fume cupboards).
- Solvent work must be performed in designated solvent benches.
- There is specific training given as part of the Cleanroom induction on how to deal with acid/alkali spills. If the spill is of greater than 10ml in volume and occurs outside the fume cupboard then evacuate the room and call the emergency response team.

5.11 Display Screen Equipment

The Display Screen Equipment (DSE) Regulations, 1992, apply to a display screen 'user' that is members of staff who:

- Normally use DSE for continuous or near continuous spells of an hour or more at a time;
- use DSE in this way more or less daily;
- have to transfer information quickly to or from the DSE; and also need to apply high levels of attention and concentration; or is highly dependent on DSE or has little choice about using it; or needs special training or skills to use the DSE.

Where this criterion applies employers are required to assess VDU equipment and workstations to reduce any health risks; to plan VDU work so that there are breaks of activity; and to provide information and training for users. In addition, users are entitled to eyesight tests and to special spectacles should they prove necessary. Specific procedures relating to the safe use of DSE are:

- Within one month of joining the Department all new staff will be made aware of the DSE policy in this document and, if necessary, will undertake the online training programme at: [display-screen-equipment](#)
- Staff experiencing a problem using DSE equipment must inform the DSE Assessor or DSO and/or line manager as soon as possible to enable action to be taken.
- After completion of the online DSE training package, users requiring free eyesight tests must contact their DSE Assessor, DSO or line manager, who will notify the University Health and Safety Department so that an approval for a free eyesight test may be issued.

All Department Staff / DSE Users shall:

- comply with any recommendations made by the DSE Assessor;
- be encouraged to report any health problems (either pre-existing or diagnosed) related to their use of DSE to their line manager and DSE Assessor;
- inform the DSE Assessor of any change of circumstance relating to your DSE assessment.

The Display Screen Assessors are Fahmi Mohammad and Dianne Webster.

Further information with regard to arrangements and responsibilities for Display Screen Equipment are to be found within the University's comprehensive DSE Policy at: [DSE Policy & Procedures](#)

5.12 Fire Training and Action

- Fire training is a mandatory for all new staff, visitors and PGR students.
- **It is MANDATORY that all staff at the University complete the online Fire training every year within 12 months of the last course being taken.**
- A register of who has and has not completed their training is kept and reviewed on a 6 weekly basis as part of the discussion of H&S at the Executive Committee. Failure to comply with this requirement may lead to exclusion from the department until it is completed and/or disciplinary action being taken.

To summon assistance, such as the Ambulance, Fire or Police services etc., use any internal telephone and call telephone **number 4444** or direct call number **0114 222 4444** from your mobile to contact the University's Emergency Control Centre.

Fire

Upon discovering a fire:

- Close doors etc., to isolate fire and raise the alarm by either breaking the glass of an emergency call point or shouting fire, or by telephoning the University's Emergency Control Centre (internal **4444** - see above).

- Call the Fire service by calling the University's Emergency Control Centre (internal **4444** - see above). Be prepared to give details of the exact location of the incident, nature of incident, any specific hazards (e.g. chemicals), and number of casualties (if any).
- Only if safe to do so and you are not alone, attempt to tackle the fire with an appropriate portable extinguisher. Human safety **MUST** come first, if in doubt close doors on the fire and evacuate to the designated assembly point.

Evacuation

On hearing the fire alarm (which is a loud continuous alarm), immediately leave the building by the nearest safe exit (which may be an Emergency Exit). Congregate at the assembly point identified for your building - for the Portobello, PLB, Mechanical Workshop and Stephenson Buildings, the assembly point is in **St. George's Church Yard**, for the Centre for Nanoscience and Technology, George Porter and Kroto buildings, the assembly point is at the side of the **Gatehouse/Porters Lodge** in the car park. For 3, Solly Street, the assembly point is Bakers Lane (100 metres up Solly Street on the left).

5.13 Working at Height

- No work at height is to be performed by anyone without a suitable risk assessment being put in place first.
- Equipment for working at height is only available to authorised users.
- The register of equipment is kept up to date, and responsibility for ensuring that any statutory checks have been performed and recorded, by Jon Wall.
- Anyone managing, planning or controlling any work involving the use of ladders or step-ladders, including kick stools, must have received training in the use of ladders or step-ladders for working at height.
- Only staff who have received training in the correct use of ladders and step ladders are to be considered as authorised users.
- Students who have completed training in the use of ladders and step-ladders must be supervised by an authorised ladder user.
- All checks will be recorded and all equipment will be labelled to demonstrate this complete with date of the last check and date of the next review.
- Checks will be performed every 6 months.
- Any work that involves entering loft spaces will require an emergency escape plan to have put into place.

5.14 Lifting Equipment

Lifting operations are defined as any activity that involves lifting or lowering a load. The Department has a number of items of equipment that are specifically intended to lift and transport loads, e.g. pallet trucks, A-frame block-and-tackle cranes. Lifting operations and equipment are subject to the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER). The Department will comply with the requirements of the LOLER Regulations so as to ensure that all lifting operations are safe to undertake. The HOD will appoint a member of technical staff as the LOLER lead who will become an ex-officio member of the Departmental Health and Safety Committee (see Appendix 1).

The LOLER lead will:

- Maintain a good working knowledge of LOLER, including requesting training for themselves

- Assist in maintaining a list of lifting equipment in the Department
- Coordinate audit and inspection visits and take the lead in implementing the
- Provide advice to colleagues on students on the use of lifting equipment, and where necessary, assist in the lift itself
- Provide a report to each Department Health and Safety Committee

Users must ensure that every lifting operation involving lifting equipment is properly planned by a competent person, appropriately supervised and carried out in a safe manner by a competent person.

All lifting equipment in the Department is annually inspected by an external assessor to establish and record its condition.

5.15 Work Equipment

In accordance with *The Provision and Use of Work Equipment Regulations (PUWER)*, the University has a duty of care to ensure the safety of persons using work equipment.

"Work equipment" covers **all** equipment used within the Department, including personal equipment (e.g. brought from home), borrowed or hired equipment. The definition of "equipment" in this context is very broad and would cover everything from, say, a photocopier through to a scalpel.

Everyone who specifies, purchases, uses and/or is responsible for work equipment should:

- Ensure that it is safe, suitable for its task and for the environment in which it is to be used.
- Be sure that it complies with any appropriate E.U. regulations (e.g. does it carry a 'CE' mark where applicable?)
- Keep it in a state of good repair, operating a system of planned checks and maintenance where appropriate.
- Consider whether any hazards might arise in both normal use and during any foreseeable malfunction. If the equipment might pose any significant risk to users or others, ensure that it is appropriately sited and guarded and that procedures are in place to eliminate or minimise that risk.
- Ensure that, where appropriate, both users and supervisors of users receive appropriate instruction and training in the safe use of this equipment and are aware of any hazards that might arise from its use or its foreseeable malfunction. Complex instructions are better written down.

Guidance can be obtained from the DTM and [the DSO](#) or any member of the [Safety Committee](#).

5.16 Noise and Vibration

In accordance with the *Control of Noise at Work Regulations* and the *Control of Vibration at Work Regulations*, the University has a duty of care to ensure the health of individuals who may be exposed to excessive noise or vibration.

Exposure to excessive noise may result in noise induced hearing loss (NIHL), temporary or permanent acoustic trauma caused by sudden/loud noises, tinnitus, and in extreme cases total deafness. Exposure to vibration (typically through handheld power tools, vibrating surfaces, and vehicles) may result in damage to nerves and blood vessels, circulatory disorders, problems with joints or other musculoskeletal conditions.

The Head of Department shall:

- consult with the University's Health & Safety Department on matters pertaining to noise or vibration exposure;
- ensure the undertaking of suitable and sufficient risk assessments by a competent person where decibel levels are at, or above, the thresholds laid down by the relevant Regulation;
- ensure the undertaking of suitable and sufficient risk assessments by a competent person where exposure to vibration is at, or above, the thresholds laid down by the relevant Regulation;
- ensure all control measures identified by risk assessment for exposure to noise or vibration are implemented, including the provision of PPE;
- ensure that the safety of individuals is not compromised where noise levels override other audible warning signals through their use of PPE.

The Department Safety Officer shall:

- ensure the dissemination of relevant information to all Department staff who are exposed to noise and/or vibration;
- determine Hearing Protection Zones and achieve demarcation of these zones through use of appropriate signage;
- monitor control measures identified by risk assessment to ensure they are implemented and adhered to;
- liaise with the University Occupational Health Advisor (or approved external service provider) on issues arising out of exposure to noise or vibration.

Managers/Supervisors/Lecturers/Technicians shall:

- enforce all control measures (including the use of PPE) identified by risk assessments for staff/students under their control.

All Department staff shall:

- read all information provided in relation to the hazards posed by noise and vibration;
- adhere to control measures (including the use of PPE) at all times when required to do so, and report any defects with regard to their PPE;
- be encouraged to inform their supervisor/line manager of any pre-existing or subsequently diagnosed health conditions that may be affected by exposure to noise or vibration through their work;
- present themselves for health surveillance when required to do so.

5.17 Portable Appliance Testing (PAT)

By law, all electrical equipment must be tested regularly. The test includes assessment of cables, fuses, connectors, etc., earth continuity and insulation resistance. The testing of equipment in this Department is organised by [Ian Wraith](#) in the Electronics Workshop (room F146, tel. 25864).

- Before using electrical equipment it is your responsibility to check that it has been tested and that the test label shows a date for "next test due" that has not yet passed.
- Always perform a visual inspection of cables on any portable device. You are looking for

abrasions, splits and cuts in the insulation, any signs of wear or trapping, and any signs of scorching to the plug, before use. If in doubt have it assessed by the electronics Workshop.

- Before any new equipment can be used it must first be tested (usually this is done immediately on arrival) either by the Electronic Workshop or a suitably qualified technician. Details of all electrical equipment have to be recorded and a PAT check carried out. Equipment that passes is labelled showing the "next test due" date.
- A regular cycle of testing takes place in the department, however this is only done during a block of a few weeks each year so equipment should not be left untested or out-of-test-date on the assumption that it will be done automatically.
- Equipment found not to be PAT tested or whose test date is overdue should not be used. Contact your nearest technician, who will then arrange to have it tested.
- All equipment brought into the Department, including personal equipment (e.g. brought from home), borrowed or hired equipment and equipment returning from calibration or repair should be treated as new equipment.
- All electrical equipment or apparatus constructed in the Department, which is to have some form of connection to mains electricity (or similar source of power), must also be tested (however temporary it may be).
- Any electrical equipment that is found to be faulty should be reported to the Electronics Workshop and clearly labelled as "**Faulty: Do Not Use**" to prevent further use.

5.18 Adapters and Electrical Plugs

It is against University safety policy to use equipment with non-British mains plugs within the University. If you have such an item please contact [Ian Wraith](#) who will convert it as required. Any equipment found using non-British mains plugs will be confiscated.

For further information consult [Ian Wraith](#) in the Electronics Workshop (George Porter, room C32, tel. 25864).

5.19 Batteries

We use a large variety of batteries in EEE ranging in size from button cells up to the Willenhall 2Mw system, and these are made of a range of materials some of which may constitute a hazard if handled, stored, or charged incorrectly.

Some of the hazards presented by batteries include:

- Chemical burns
- Electrocutation
- Burns from hot surfaces
- Explosion

Using large batteries safely at work is covered by a HSE booklet available at this link:

<http://www.hse.gov.uk/pubns/indg139.pdf>

Please read this before starting any work with batteries. All work with batteries should still be risk assessed and, depending on the type of battery and the gases and by-products it may produce as a result of charging or discharging, you may need to perform COSHH risk assessments and volumetric calculations for the area being used to ensure adequate ventilation.

When working with or near batteries, and also when moving or handling them:

Do...

- Wear gloves and suitable eye protection, preferably goggles or a visor.
- Wear a plastic apron and suitable boots when handling battery chemicals such as sulphuric acid or potassium hydroxide.
- Empty your pockets of any metal objects that could fall onto the battery or bridge across its terminals.
- Keep sources of ignition – such as flames, sparks, electrical equipment, hot objects and mobile phones – well away from batteries that are being charged, have recently been charged, or are being moved.
- Use suitable single-ended tools with insulated handles.
- Fit temporary plastic covers over the battery terminals.
- Charge batteries in a dedicated, well-ventilated area.
- Share the load with a workmate when lifting batteries – they can be very heavy.
- Use insulated lifting equipment and check there are no tools, cables or other clutter you could trip on.
- Wash your hands thoroughly after working with batteries, especially before eating, smoking or going to the toilet.

Don't...

- Work with batteries unless you have been properly trained.
- Smoke.
- Wear a watch, ring, chain, bracelet or any other metal item.
- Overcharge the battery – stop charging as soon as it is fully charged.

5.20 Pressure systems

A pressure system is defined as a system containing liquids and/or gases at pressures above 0.5 bar or any system containing steam. Examples are a compressed air supply, steam equipment or a system using a compressed gas cylinder. These systems are covered by the Pressure Systems Safety Regulations (PSSR).

Anyone who uses, or intends to use or purchase, a pressure system should be aware of the current regulations covering such systems.

If the product of the Pressure multiplied the Volume of the largest pressure vessel in the system is 250 bar/litres or more, then **by law** a “Written Scheme of Examination” **must** be obtained for that system **prior** to its commissioning and use.

Although it is not a legal requirement for systems below this threshold, this department’s policy is that a “Written Scheme of Examination” **must** be obtained for **all** compressor receivers **prior** to their commissioning and use.

For more information on “Written Scheme of Examination”, contact [David Morris](#).

It is essential to ensure that all pressure systems in the Department are registered, insured, and covered by a regular maintenance schedule. Adequate information must be provided to all relevant personnel for the safe operation, maintenance and examination of such systems.

Anyone using a pressure system must consult [David Morris](#) who will provide information and guidance.

5.21 Cryogenics

The hazards associated with low temperature liquefied or solidified gases mainly arise from their physical properties. They are:

- Asphyxiation - Rapidly evaporating gases can reduce the oxygen concentration of air by displacement so that it reaches dangerous levels (see table below). Areas with oxygen concentrations below 18% must never be entered. It is recommended that oxygen alarms are set to alarm at 19%.
- Cold burns, frostbite and hypothermia from contact with liquefied/solid materials, cold surfaces or gases.
- Over pressurisation if the large volume expansion caused by the liquid becoming a gas is confined or trapped.
- Fire from oxygen enriched atmospheres generated by the condensation of oxygen onto surfaces.

- Materials becoming brittle from the effects of extreme cold and could result in catastrophic failure.
- Manual handling risks from delivering/transporting of cryogenic materials and their containers around site may create manual handling hazards.

In EEE we utilise Liquid Nitrogen in various ways. Access to Liquid Nitrogen supplies is only allowed to individuals who have received training from the DSO or Designated Proxy, and all Liquid Nitrogen access points are locked off with keys that are tightly controlled and only available to trained users.

We don't use Dry Ice at this point in time.

5.22 Visitors

Members of the Department who invite or receive visitors are responsible for their safety, and for ensuring that they are given relevant information about any hazards they may encounter.

This applies to **all** visitors, including UCAS candidates, academic visitors, contractors, service engineers, sales representatives, work experience non-employees or casual visitors.

As a minimum **all** visitors should be informed of the [Fire and Emergency Procedures](#). Further information should be provided depending on the potential hazards arising from the purpose and location of the visit.

Short-term Visitors

Short-term visitors (2 months or less) should be supervised at all times.

Longer-term Visitors

On arrival, longer-term visitors should be directed to the office Suite 37 at 3 Solly Street. There, they should fill in a Departmental Registration Form. They will then be issued with a Departmental Induction Pack containing general safety information relevant to the University and to the Department. Their host should advise them of any additional safety procedures specific to their area of work.

All Visitors

All visitors should be:

- Made familiar with the EEE Health and Safety Policy and COSHH Policy as well as emergency arrangements;
- Instructed not to enter laboratories or workshops unaccompanied and without authorization from the host academic;
- Instructed not to touch any equipment or process without permission of the host academic;
- Made aware that entry to many workshops and laboratories will require them to wear protective equipment and/or clothing. The host academic should advise and where necessary make provision of such PPE and or clothing;
- Made aware that there are restrictions on working outside normal hours. If this is essential, their host will need to make special arrangements through the HOD;
- Made aware that although we make every effort to ensure their health and safety, should they see a potential safety hazard, they are expected to report it immediately to a member of staff.

5.21 Use of UAVs, Radio Controlled Vehicles, and semi/autonomous vehicles

It is a requirement that the DSO is informed of any plans to use UAV's (drones), Radio Controlled Vehicles or semi/autonomous vehicles before any work is carried out. Detailed descriptions of the planned work must be provided.

The use of UAVs in the UK is governed by the Civil Aviation Authority (CAA) and whilst it is still evolving drone pilots are increasingly being viewed as General Aviation Pilots.

Information on rules for flying drones for recreation are available [here](#). Whilst these are good rules to work to, the department has to consider the safety of staff, students and members of the public as well as reputational risk should an incident occur. To this end permission for drone flights of any type must be made in writing to the HOD at least two weeks before the planned flight. This request must include:

- Detailed information on the drone- dimensions, power output, weight, control systems, camera systems etc...
- The location of the flight- where will you take off from, what is the surrounding area like (i.e.: built up and busy, open fields, etc...) and who owns the ground.
- The nature of the flight (i.e.: test flight of newly designed drone, or drone flight to test experimental equipment being carried, etc...)
- Planned duration of the flight.

At this point we are still developing the rules but we currently say:

- Only trained drone pilots are allowed to fly drones for work purposes.

5.24 3-Dimensional Printing

3-D printers are becoming increasingly prevalent in the department as they are a versatile tool that brings enormous benefits in many aspects of the work we undertake. Some consideration needs to

be given to where and how 3-D printers are used in the department since they come in a variety of types and sizes, and use many different substrates.

Generally, a 3-D printer uses high voltage, heat and moving parts as a minimum, and larger systems may also introduce hydraulic and pneumatic systems working at high pressure. The process of printing usually involves sintering, extruding or curing the substrate.

The printing process may well result in the release of vapours and gases of a hazardous nature as the substrate being used is heated. Before buying/siting a 3-D printer a risk assessment should be performed. This should consider the type of work that will be done and the substrates that may be used.

- Will LEV be required?
- Should the printer be enclosed in some way (if not manufactured in this way already) to protect users from moving parts, heat, vapour and gas emissions?
- How will it be interlocked?
- Will a COSHH assessment be required?
- Does your system use UV? How will you prevent exposure of staff/students?

5.25 Animals in University Buildings

Animals (other than nationally recognised support dogs) must not be brought into University buildings, nor should they be exercised on University property in such a manner as to cause nuisance to others

APPENDIX 6- Use of Lasers within EEE

The University has a responsibility under the Health and Safety at Work Act 1974, to ensure that all work with radiation is carried out safely. In the Department of Electronic & Electrical Engineering, the sources of potentially hazardous radiation at the present time are in the main LASERS. There are also some commercial X-ray diffraction sets and high power microwave sources.

Lasers

Radiation safety of laser products is covered by BS EN 60825-1:1994 which is a 'euronorm' based on the International Electrotechnical Commission IEC 60825-1. Guidance Notes for Universities incorporating these requirements are available in 'Local Rules for Laser Safety'.

- If considering the purchase of a new laser system a scheme of work and relevant risk assessments must be sent to the DLSO for review prior to any order being placed.
- All lasers and laser systems, except low-power Class 1 lasers, must be registered with Safety Services.
- All people intending to work with Class 3R lasers and above must register with Safety Services via the [Departmental Laser Safety Officer](#) (DLSO see below).
- With the exception of Class 1 lasers the DLSO should receive copies of all relevant schemes of work involving lasers.

The DLSO information is displayed in Appendix 1.

APPENDIX 7- Use of Radiation within EEE (ionising and non-ionising)

Extra Low Frequency, Radio Frequency & Microwave Radiation (Electric & Magnetic fields)

Anyone contemplating schemes of work involving a radiation flux in the region of 1 mW/cm² or an electric field 1kV/m or a magnetic flux 0.02 mTesla or more should inform the [Departmental Radiation Protection Supervisor](#) (DRPS, see below). The Department has a RF power meter, see [Ian Wraith](#) (Electronics Workshop).

Ionising Radiation

The use of radioactive materials, X-ray equipment and any other source of ionising radiation is regulated by the Radioactive Substances Act 1993, the Ionising Radiation Regulations 1985 and associated Codes of Practice and Guidance Notes. The [Departmental Radiation Protection Supervisor](#) (DRPS) must be informed of any proposed work involving ionising radiation. All sources of such radiation must be registered by Safety Services and will be subject to regular inspection. The [DRPS](#) maintains a list of persons certified to use X-ray equipment who have demonstrated the necessary level of competence in the use of this equipment safely. New staff and students can be added to this list on application to the [DRPS](#). It is an expectation that such persons will carry out the [ionising radiation training](#) (either online, or in person) at the earliest possible opportunity and failure to do so, without good reason, may result in persons being prohibited to use such systems.

Details of the DRPS for Ionising and Non-ionising Radiation are shown in Appendix 1.