School of Engineering

Dept of Engineering Trades
Electrical Workshop
& Laboratories

Health and Safety File

Workshop & Lab
P1253, P1254, P1255 / C207

File 1

Rev: April 2016

School of Engineering

Dundalk Institute of Technology

Ancillary Safety Statement

April 2016

This Ancillary Safety Statement is to be read in conjunction with the Parent Safety Statement of Dundalk Institute of Technology

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1. Introduction

Under the provisions of The Safety, Health and Welfare at Work Act 2005, Dundalk Institute of Technology is required to ensure so far as is reasonably practicable the health, safety and welfare of all its employees and students engaged in work or study, and all visitors to the Institute premises.

In view of the recent extensive expansion that has taken place on the campus and in order to comply with the requirements of the 2005 Act, the Institute has decided to review and update its Safety Statement. Dundalk Institute of Technology's safety management programme consists of a Parent Safety Statement supplemented by seven ancillary Safety Statements, which apply to different functional areas of the Institute. These ancillary Safety Statements take account of the diverse range of activities, which apply across the Institute.

The Institute's overall Safety Statement is comprised of the following documents:

- Parent Safety Statement
- Ancillary Safety Statement – School of Business & Humanities
- Ancillary Safety Statement – School of Health & Science
- **Ancillary Safety Statement – School of Engineering**
- Ancillary Safety Statement – School of Informatics & Creative Arts
- Ancillary Safety Statement – Secretary/Financial Controller's Functional Area
- Ancillary Safety Statement – Registrar's Functional Area
- Ancillary Safety Statement – Regional Development Centre Functional Area
- Emergency Evacuations Procedures Manual

The purpose of the Ancillary Safety Statements is to provide details of the specific hazards and control measures which apply in these areas. Each Ancillary Safety Statement should be read in conjunction with the Parent Safety Statement.

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2. General Statement of Policy within the School of Engineering

The School of Engineering Functional Area is committed to ensuring that high standards of health and safety are achieved and maintained throughout all areas under our control. The key mechanism for achieving and maintaining safety is Risk Assessment, by which we identify hazards, which have the potential for harming health or causing accidents, evaluate the risks arising and select and implement appropriate precautions.

Throughout the School of Engineering Functional Area, Risk Assessments are carried out in all areas under our control periodically. Risk Assessments must take account of any changes with regard to the structure of the organization, Academic Staff, work practices; use of machinery, design techniques or equipment all may necessitate periodic changes to this document as well as any periodical amendments or updates to legislation.

It is essential that all staff and students contribute and cooperate to this process, thus ensuring that the School of Engineering Functional Area's stated objective of providing in so far as is reasonably practicable a safe place of work is achieved. Employees are encouraged to contribute to the improvement of health and safety by making suggestions to their departmental manager. The success of this policy depends on the co-operation of all staff and students, and it is therefore extremely important that staff:

Read and understand the safety information provided

Know their role and responsibilities.

Always abide by the arrangements the Institute has put in place to ensure their health, safety welfare, and that of their colleagues and others.

The process of Risk Assessment in the School of Engineering Functional Area enables us to take all relevant precautions to ensure that Dundalk Institute of Technology's legal standard as an employer is fulfilled particularly in relation to:

- Exercising all due care
- Putting in place necessary protective and preventative measures
- Identifying hazards and assessing risks likely to result in accidents or ill-health
- Not being required to take further measures where these would be grossly disproportionate having regard to the unusual, unforeseeable and exceptional nature of the circumstances.

Health and Safety is overseen in the School by the Functional Area Safety Committee which contains representatives from all of the areas within the School (See Appendix I for membership details)

Signed on behalf of School of Engineering, Dundalk Institute of Technology,

_____

Mr. Eugene Roe
Head of School of Engineering

3.0 School of Engineering Functional Safety Area: Description

The School of Engineering is divided into Four Departments, one Research Centre.

1. Department of Electronic & Mechanical Engineering
2. Department of the Built Environment
3. Department of Engineering Trades
4. Centre for Renewable Energy at DkIT(CREDIT)

The School of Engineering is predominantly located in the following areas of the Institute:

Location	Description	Primary Activity
North Block	Dept. Electronic & Mechanical Engineering	○ Lecture rooms ○ Computer Labs ○ Office based activities ○ Work Placements ○ Laboratories ○ Workshops
North Block South Block	Dept. of the Built Environment	○ Lecture rooms ○ Computer Labs ○ Office based activities ○ Laboratories ○ Fieldwork
North Block South Block The Carroll's Building	Dept of Engineering Trades	○ Lecture Rooms ○ Computer Labs ○ Office based activities ○ Drawing Offices ○ Motor Engineering Workshop ○ Plumbing Workshops ○ Carpentry Workshops ○ Electrical Workshops ○ Motor Engineering Lab ○ Electrical Lab ○ Plumbing Lab

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Risk Assessment is carried out at least once per year in each location in the School of Engineering functional area under the direction of the Head of School, Mr. Eugene Roe who is the responsible person.

The wide range of workplace activities and the associated risks to health, safety and welfare within the School of Engineering can be broadly categorized as follows:-

- Offices, (Administration and Lecturing Staff) – low to medium risk.
- Lecture Rooms, Drawing Offices, Computer Labs. – low to medium risk
- Workshops – low to high risk

Refer to Appendix II for School of Engineering safety management organizational layout.

Hard copies of this Functional Area Ancillary Safety Statement are available at the following locations:

1. Administration Office, School of Engineering
2. Workshop locations
3. Laboratories

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4.0 School of Engineering – Overview of Risk Assessment Process.

This Ancillary Safety Statement covers all activities carried out by the School of Engineering, and should be read in conjunction with the Institute Parent Safety Statement.

Dundalk Institute of Technology will adapt the "General principles of prevention" as outlined in the 2005 Act Schedule 3

When a hazard is identified and the risk assessed, the necessary arrangements are put in place to protect safety and health.

Dundalk Institute of Technology will utilize the hierarchy of controls A series of common sense steps for hazard control (often called hierarchy of control) **where elimination of the risk is not reasonably practical**,.

These steps are:

1. Substitute the hazard (e.g. use a less harmful substance).
2. Isolate the hazard.
3. Use engineering controls (e.g. Physical controls).
4. Put in safe work practices (e.g. Instruction, training, supervision).
5. Use Personal Protective Equipment (PPE) such as gloves / overalls.

If a hazard cannot reasonably be eliminated it is the policy to work through this list to minimise exposure to risks. For example, the Institute will try to substitute the hazard first. If this is not possible, will go to the next step and so on. In some cases it may be appropriate to implement a combination of the steps e.g. Steps 3, 4 and 5.

The list above indicates an "order of priority" for remedial measures for any hazard situation which Dundalk Institute of Technology will adapt.

The process of Risk Analysis is by numerical format.

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

The above risk analysis is incorporated into the School's **Safe Work Practice Sheets**

The Analysis takes into account who is exposed
The initial Risk Rating before controls are implemented
The Reduction Risk Rating after controls is in place

A risk is the probability or likelihood of a hazard actually causing a degree of injury or damage.

A hazard is anything that can potentially cause harm.

After a hazard has been identified, it is evaluated in order to assess what its impact would be if steps to control it were not taken. In practical terms, one determines the likelihood of an accident happening and the consequences of it happening.

There are inevitable difficulties in assessing risks. Some risks such as exposure to e.g.- Chemicals / Manual Handling / Lone Workers / Trainees may require physical or organisational measurements to be taken. Risk depends on many (often related) circumstances:-

Is anyone exposed to the hazard? Is the hazard likely to cause injury?
Is the hazard well controlled? Is the level of supervision adequate?
How long people are exposed and what are are the levels of exposure that should not be exceeded (e.g. Equipment, chemicals, poor lifting techniques)

Risk Assessment will be carried out at least once a year in all of the different sites in the School. The Risk Assessment process adopted by the School of Engineering identifies hazards posed by activities within the School and quantifies the risk posed by same.

In most cases these hazards can be controlled by adhering to procedures detailed in the School's **Safe Work Practice Sheets** (Appendix III) which are developed on an as-needed basis and identified through regular area-by-area risk assessment / Inspection. As part of the annual Risk Assessment process, all Safe Work Practice Procedure Sheets will be reviewed and updated to ensure that they take account of any changing circumstances that have arisen during the course of the year, any changes to work practices, introduction of equipment, changes in legislation will also require updating as is necessary.

Safe Work Practice Sheets are available in the School of Engineering Administrative office, Heads of Departments, Workshop Locations, Laboratories and on the Institute's website

The list of these SWPS is also included in Appendix III of this document. More generic college wide SWPS are also to be adhered to and are available at:

The primary objective of the Safe Work Practice procedures is to eliminate, reduce or control any risks posed as a result of the hazards that exist throughout the School. These Safe Work Practice Procedures are also made available to all staff and students operating in any lab, workshop or classroom environment that is the subject of a risk assessment and safe work practice procedures.

Adherence to the Safe Work Practice Procedures is the primary means of risk control in the School of Engineering. However, hazards may arise from time to time, which are not covered by

these procedures. Under Section 13 (h)(i - iii) of the 2005 Safety, Health & Welfare at Work Act, all staff are required to report any hazards that they notice or observe to their employer. Within the School of Engineering, any hazard noted or observed by any member of staff must be reported to their immediate superior.

Incidents and Dangerous Occurrences must be notified to the relevant supervisor using the forms included in Appendix IV.

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5.0 Functional Area Safety Records

Functional Area safety records include but are not limited to the following documents:

1. Ancillary Safety Statement, including Safe Work Practice Sheets
2. Health and Safety Training Records
3. Accident, Incident and Near Miss Dangerous Occurrence Reports
4. Functional Area Safety Committee Meeting Records
5. Inspection Certificates (where applicable)

(1-5) can be located as follows for:

(a) **The School of Engineering**

Record Type	Building	Room No.	Contact
Ancillary Safety Statement, including Safe Work Practice Sheets	North Block	School of Engineering Office, NC121	Orlagh Devine orlagh.devine@dkit.ie, ext. 2894
		Offices	
	North Block	Mr. Eugene Roe (HOS) NC126	eugene.roe@dkit.ie ext. 2893
		Mr. Simon O'Neill (HOD) NC124	simon.oneill@dkit.ie ext. 2847
		Mr. Noel McKenna (HOD) NC127	noel.mckenna@dkit.ie ext. 2891
		Mr. Pat McCormick (HOD) NC128	pat.mccormick@dkit.ieext. 2551
		Mr. Padraig McGuigan (Section Head) NW207	padraig.mcguigan@dkit.ie ext. 2698
		Mr James Mulvany (Section Head) NW216	james.mulvany@dkit.ie ext 2520
	South Block	Mr. John Doherty (Section Head) S120	john.doherty@dkit.ie ext. 2692
Training Records	North Block	School of Engineering Office, NC121	Orlagh Devine orlagh.devine@dkit.ie, ext. 2894
Incident & Accident Reports	North Block	School of Engineering Office, NC121	Orlagh Devine orlagh.devine@dkit.ie, ext. 2894
FASC Meeting Records	North Block	School of Engineering Office, NC121	Orlagh Devine orlagh.devine@dkit.ie, ext. 2894
Inspection Certificates	North Block	School of Engineering Office, NC121	Orlagh Devine orlagh.devine@dkit.ie, ext. 2894

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APPENDICES

Appendix I

Functional Area Safety Committee 2015/2016

1. Eugene Roe, Head of School of Engineering (Chairperson)
2. Simon O'Neill, Head of Department of Engineering Trades
3. Pat McCormick, Head of Department of Mechanical and Electronic Engineering
4. Padraig McGuigan, Head of Section: Mechanical Engineering
5. James Mulvany, Head of Section: Electronic Engineering
6. Noel McKenna, Head of Department of the Built Environment
7. John Doherty, Head of Section Carpentry/ Joinery / Plumbing
8. Orlagh Devine, Senior Administration
9. Jim Connolly, Senior Technical Officer
10. Paul Egan, Lecturer
11. William Lyons, Lecturer
12. Brendan Walsh, Lecturer
13. Dermot Clarke, Lecturer
14. Paul Durcan, Lecturer

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Appendix II

List of Responsible Persons within the School of Engineering

Head of School	**Mr. Eugene Roe**
Head of Dept of Mechanical & Electronic Engineering	**Mr. Pat McCormick**
Head of Section: Mechanical Engineering	**Mr. Padraig McGuigan**
Head of Section: Electronic Engineering	**Mr. James Mulvany**
Head of Dept of the Built Environment	**Mr. Noel McKenna**
Head of Dept of Engineering Trades	**Mr. Simon O'Neill**
Head of Section: C&J and Plumbing	**Mr. John Doherty**
Centre for Renewable Energy at Dundalk Institute of Technology (CREDIT)	**Dr. Tom Dooley**

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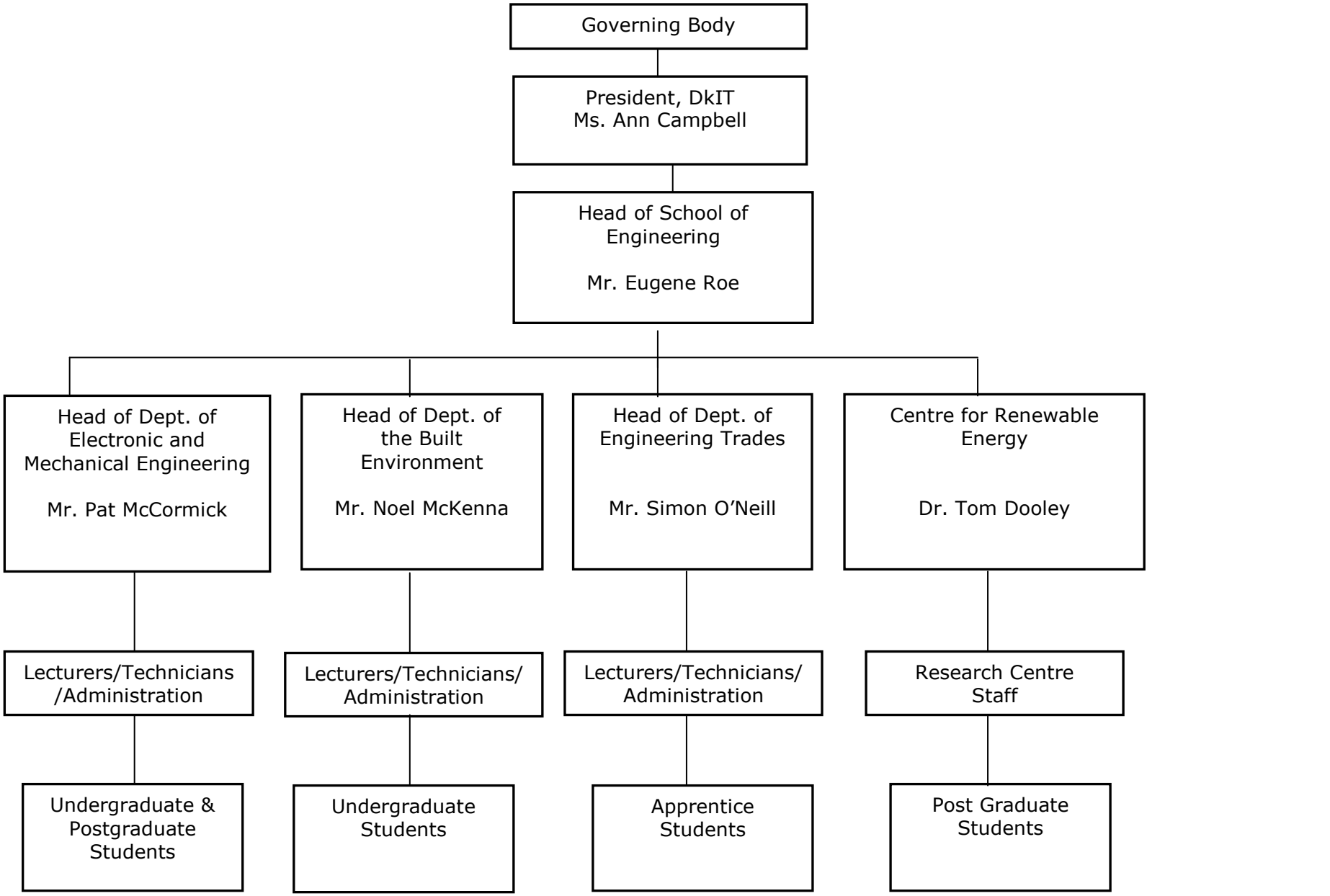

School of Engineering
Safety Management Organisation Chart

Appendix III

Safe Work Practice Sheets

SWPS ID	Electrical Trades Workshop / Labs	P1253 / P1254 / P1255

General Routine Safe Work Practice Sheets Used in this Area:

GEN 001	General Rules
GEN 002	Access and Egress
GEN 003	Fire Safety
GEN 005	Chemical Agents
GEN 009	Slips, Trips and Falls
GEN 010	Lone Person Working
GEN 019	Storage Areas
GEN 026	Use of Hand Tools
SWPS 007	Safe Use of Ladders/ Stepladders
GEN 027	Cutters, Scalpels and Stanley Knives

Engineering Specific Safe Work Practice Sheets Used in this Area:

ELT 001	Wiring / Building and Testing of Electrical Panels
ELT 002	Rotation of Electrical Workstations
ELT 003	Electrical Test Beds
ELT 004	Final Testing of Students Exercise
ELT 005	Demonstration of Various Alarm Systems
ELT 006	Preparation of Student Work Materials
ELT 007	Portable Wheeled White Boards
ELT 008	Trolley With Three Motors
ELT 009	Hand Held Tools for Electrical
ELT 010	Corded and Cordless Hand Held Drills
ELT 011	Soldering - (Manual Soldering Iron)
ELT C 001	Cleaning of the Electrical Workshop
ELT C 002	Disposal of Waste Rubbish in Bins
SWPS 09	Manual Handling
SWPS 08	Electrical Safety
SWPS 015	General Health and Welfare Provisions
SWPS 016	Emergency Response
SWPS 017	Emergency Contact Numbers

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Appendix III

General Routine Safe Work Practice Sheets

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Safe Work Practice Sheet General Rules	Ref: SWPS 001
	Date: July 09
	Assessed by: E.Roe

Hazards

There is always an ever-present risk of accidents occurring due to lack of vigilance and awareness of staff and students

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Everyday working environment

Controls

- Smoking, eating and drinking is prohibited in all areas other than designated
- areas. Smoking is prohibited in all areas.
- Exercise care when opening or closing doors on entering or leaving rooms. Never run.
- Conduct yourself in a responsible manner and do not act in a way that could be dangerous to yourself or others. Refrain from indulging inappropriate behavior as it could have serious consequences.
- No student or member of staff should ever work alone in a Laboratory, Workshop, Service Duct or Plant Room, without prior notification to Line Manager.
- All bags and coats are to be left in designated areas. All work and teaching areas should be kept tidy when in use and left tidy when finished.
- All accidents however minor must be reported to immediate superior.
- No member of staff or student is to interfere with any workplace equipment.
- Report any malfunctioning or dangerous or defective equipment to immediate supervisor without delay. Never attempt to effect repairs, no matter how trivial.
- Become familiar with position and use of safety equipment for each area in which you work.
- Study carefully and obey the Safe Work Practice Sheets for any area in which you are required to work.
- Co-operate with Employer in fulfilling duties imposed under Section 13(1)(a- h) of the Safety, Health & Welfare Act 2005

Checks & Inspections

Constant vigilance and awareness

Information, Instruction & Training

Not applicable

Personal protective equipment required (last resort)

Not applicable

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	3	=	Risk Factor	6 high risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 low / medium risk

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet Access and Egress	Ref: SWPS 002
	Date: July 09
	Assessed by: E.Roe

Hazards

Inadequate access and egress in the workplace can result in slips, trips and falls. Obstructed access roads and paths can also pose a risk of injury to pedestrians and to vehicle operators and can also delay emergency escape and emergency vehicle access.

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Everyday working environment on campus

Controls

1. All doorways and access points in the workplace must be kept clear of obstructions.
2. All passageways and pedestrian routes must be kept clear from obstructions.
3. Materials must be stored in designated areas away from pedestrian and vehicular routes.
4. All stairways with more than 3 steps should be provided with handrails and maintained in good condition.
5. Adequate lighting must be provided throughout the Institute at all entry points, exit points and along corridors and passageways.
6. Workplaces must be kept clean and tidy at all times.
7. All spillages must be cleaned up immediately.
8. All cabling and hosing must be neatly tied off or ramped in order to prevent tripping.
9. Workplace floors must be kept in a level and even condition where possible in so far as is practicable. All holes and trip hazards should be removed, filled in or covered.
10. Trip hazards which cannot be removed must be clearly visible or signed as such.
11. Chairs, desks or drawers should never be used to access shelving or any other elevated area.
12. Stepladders or kick stools must always be used.
13. Vehicle drivers must exercise extreme caution when driving on Institute site.

All defects in flooring, lighting, stairwells, etc must be reported to the Estates Office via the Maintenance Request online system.

Checks & Inspections

Constant vigilance and awareness.

Information, Instruction & Training

Not applicable

Personal protective equipment required (last resort)

Not applicable

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	3	=	Risk Factor	6

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet Fire Safety	Ref: SWPS 003 Date: July 09 Assessed by: E.Roe

Hazards

The outbreak of fire can lead to:

- Serious bodily injury or fatality
- Damaged property or plant
- Disruption of premises causing loss of facilities **Person**

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

There is always an ever-present risk of fire occurring in all workplaces. Common fire hazards include improperly stored combustible or flammable materials, the use of naked flames, faulty electrical equipment, the use of flammable fuels, the use of inappropriate equipment, the build up of flammable materials or wastes in the workplace and smoking in undesignated areas. The accidental release of chemical material may also lead to the outbreak of fire, especially if the material is pyrophoric, extremely flammable or is a strong oxidiser.

Controls

The Institute is committed to providing a fire safety programme that guards against the outbreak of fire in all areas and also makes provisions for the safety of all persons in the event of a fire. The Institute would like to reiterate to all staff at this point that every employee has a responsibility to guard against the outbreak of fire in the workplace through the implementation of good fire safety practices and where applicable the adherence to the control measures outlined below.

Employees should also refer to specific fire risk assessments that apply to their specified places / type of work.

Fire Detection, Equipment & Emergency Lighting

Layout drawings, detailing the location of the fire detection and alarm systems, throughout the campus have been prepared by the Estates Office. Copies of these drawings are held by members of the Caretaking Staff, to assist in the identification of the location of any alarm signal.

Fire detection and alarm systems are installed and maintained in accordance with current standards. Emergency lighting systems are in operation in all parts of the Campus. These are installed to and regularly maintained in accordance with current standards.

Fire mains and Hydrants and Fire Hose Reels are inspected and maintained in accordance with

current standards The date of the most recent inspection is noted on each hose reel. Test reports on ring mains and hydrants are held in the Estates Office and Fire Registers.

Portable fire extinguishers are inspected and maintained in accordance with current standards. The date of testing is noted on each extinguisher.

Copies of all testing and certificates are held in Estates Office in the Fire Register.

Emergency Response

1. Each building has in place an emergency plan detailing the response to be taken in the event of the sounding of a fire alarm or the discovery of a fire. Refer to http://ww2.dkit.ie/about_dkit/health_safety/emergency_evacuations_procedures_manual for further details.
2. Fire response procedures are displayed in prominent locations within the area covered by their provisions.
3. Emergency response procedures are tested at least annually by use of a fire drill.

Procedural Controls

1. It is prohibited to use a naked flame (outside of a laboratory area) or to engage in 'hot' work (outside of designated workshops) anywhere within the Institute without first obtaining a 'Hot Work Permit' from the Institute Estates Office. Hot work is defined as grinding, welding (all types), hot cutting, and any other work with the potential to generate a spark or an ignition source.
2. It is prohibited to disengage a fire detection device, remove a fire extinguisher from its designated location or to isolate a component of a fire safety system without the express permission of the Institute Estates Office.

Training

1. It is the responsibly of individuals within the Institute to ensure that they are familiar with the provisions of any relevant emergency procedures.
2. Fire safety training is available through the Staff Training & Development Officer for all interested parties.

Means Of Escape

1. All Institute premises will be provided with clearly signed suitable means of escape and emergency exits for use in the event of a fire.
2. All escape routes and emergency exits throughout a building / premises must be kept clear at all times.
3. It is the responsibility of all Institute employees to ensure that escape routes and emergency exits in their working area are kept free from obstruction.
4. No individual may obstruct or remove from service an escape route or emergency exit without prior arrangement with the Institute Estates Office.
5. In the event that employees have a concern regarding means of escape then they must contact their manager immediately. Urgent concerns can be conveyed directly to the Institute Estates Office.

Hazardous Agents

1. As part of a hazardous agent risk assessment fire safety provisions for handling the agent(s) in question must be detailed.
2. Flammable materials may only be handled and stored in accordance with the requirements

of their Material Safety Data Sheets, with due regard being paid to their fire risks.

3. Flammable materials must be stored in a suitable storage area. The requirement for low voltage or flame proof wiring should be considered.
4. The large scale storage of flammable materials (>200l / kg) in a single location requires completion of a specific risk assessment prior to storage taking place.

1. Where new buildings are constructed by the Institute or existing buildings are substantially modified the requirements of Part B of the Building Regulations (1997) Technical Guidance Documents will be adhered to.
2. Smoking is prohibited in all indoor workplaces within the Institute.
3. Employees are encouraged to make themselves familiar with the location of alarm activation points and escape routes in their working areas.
4. Employees must not attempt to repair any electrical equipment unless they are competent to do so. All electrical repairs and installations within the University must only be completed by a competent person, following the rules laid down in the National Rules for the Electrical Installations, as prepared by the Electro-Technical Council of Ireland.
5. The amount of combustible materials stored within the workplace should be kept to a minimum.
6. In the event of an evacuation all persons must leave the workplace without exception and assembly at their designated assembly point.
7. Employees must adhere to any instructions given by Institute Fire Wardens or emergency services personnel in the event of an emergency.
8. Persons must not fight workplace fires unless they have been trained to do so and it is safe to do so.

All employees are reminded of their statuary obligation to protect their own and their co-workers safety by guarding against the outbreak of fire in the workplace through the use of safe systems of work

Checks & Inspections

Information, Instruction & Training

- Fire Drills
- Fire Warden Training
- Use of fire fighting equipment

Personal protective equipment required (last resort)

Not applicable

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	3	=	Risk Factor	6 high risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet Chemical Agents	Ref: SWPS 005 Date: July 09 Assessed by:E.Roe

Hazards

Exposure to certain chemical agents can cause a range of injuries from minor to serious long term damage. A chemical is regarded as any substance (solid, liquid, aerosol or gas) which is used for the purpose of reacting with or effecting a change in another material. This definition extends beyond the narrow context of laboratory use and embraces broadest possible interpretation. It includes substances such as solvents, cleaning fluids, detergents, glues/resins, drain cleaners, paint strippers, preserving fluids as well as chemical reagents. A broad range of chemicals are in use throughout the Institute consisting of seemingly harmless readily available substances to highly specialised and reactive laboratory agents. Exposure may be through ingestion, inhalation, skin absorption, absorption through the mucous membranes.

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Information, Instruction & Training

The hazards associated with each chemical substance are brought to the attention of the users (Senior technical staff are responsible for informing other technical staff, lecturers are responsible for informing students)

Ensure Material Safety Data Sheets are made available

Personal protective equipment required (last resort)

Care must be taken in the selection of personal protective equipment, e.g. select the correct glove to ensure that the chemical does not readily break through Personal Protective Equipment should be CE marked.

Initial Risk Rating (without any control measures)

Probability :	2-3	x	Severity	2-4	=	Risk Factor	4-9

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2-3	=	Risk Factor	2-3

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet Slips, Trips & Falls	Ref: SWPS 009
	Date: July 09
	Assessed by: E.Roe

Hazards

Slips are caused by the presence of substances such as water, grease, oil, fats, soaps, granules, plastic sheets, packaging, leaves, ice etc deposited on the floor arising from the working conditions or in some cases the weather. Slip hazards can be found on both wet and dry surfaces.

Trips can be caused by such features as electric cables or compressed-air lines across walkways, curled-up or worn carpets, uneven floor surfaces and steps, or discarded work items.

Falls may be caused by slips or trips or when adjacent surfaces are at different levels leading to persons losing their balance because they had not anticipated the change in level. Slips or trips on stairs are particularly dangerous.

The hazards listed above are so ordinary and commonplace that people often accept them as part of normal living until they or someone close to them has an accident and is seriously hurt.

Person Exposed to Risk

✓ Students ✓ Employees ✓Public ✓ Contractors ✓ Visitors

Work Description
Everyday activity on campus

Controls

Observe & Adhere to Health & Safety Authority Guidelines as below

- The starting point lies with everybody becoming aware of these hazards and taking appropriate action.
- Management must take responsibility for controlling these hazards and must assign appropriate responsibilities to staff. Clear policies should address what people need to do to identify and monitor slip, trip and fall hazards and the action to take once they identify a hazard.
- Slips, trips and falls must be considered in the workplace hazard assessment that is required by law. This assessment should take account of:
- The type of hazard including how likely it is to occur
- Characteristics of the workplace such as the nature and condition of floor surfaces, quality
- of lighting
- Influence of the weather (e.g. rain, frost or leaves)
- Maintenance and cleaning procedures
- Workplace users
- Where workplaces are being modified or constructed there is an excellent opportunity to prevent slips and trips by selecting appropriate floor materials that are slip resistant and
- installed so as to minimise trip hazards.

Nature of the hazard

In some work areas such as certain food processing activities slip hazards may not always be completely avoidable and the control measures will need to assume the hazard is always present.

- In other situations the floor surface may be non-slippery for most of the time but leaks from
- plant or bad weather may lead to the creation of a slip hazard. It only takes a small amount
- of liquid on a smooth floor to create a hazard. In these situations the immediate control
- measures will focus upon detection of liquids and the actions to be taken to remove the

hazard or reduce it by the provision of warnings and cordoning off areas.
- Permanent trip hazards should be removed as far as possible by such measures as the rerouting of pipes or cables, provision of more sockets to reduce long cable lengths, use of battery powered tools and the repair of uneven floor and stair surfaces.
- A good housekeeping regime will go a long way to reduce intermittent hazards from badly stored or discarded items. Materials should never be left or stored on stairs.
- Where changes in floor level cannot be avoided they should be clearly marked and the provision of handrails to control the movement of persons may be appropriate.
- Changes in level should not take people by surprise.

Characteristics of your workplace

- It is better to eliminate slip hazards by choosing a suitable surface rather than depending on cleaning regimes to keep a floor safe. Building designers should ensure that the intended appearance of a building does not compromise the choice of inherently safer floor options.
- Macro-rough surfaces (i.e. those that contain an aggregate) are recommended for areas that are expected to experience high levels of contamination. Floors that have hard particles throughout their thickness can maintain their slip resistance throughout their life but floors with a superficial layer of grit or slip resistant paint can become slippery as the layer is worn away.
- Profiled floors (ridges or blisters) are sometimes used in areas subject to slip hazards but these can become slippery over time as the profile becomes worn and contaminants can be left trapped within the profiles.
- Carpets or mats placed on smooth floors can pose both slip and trip hazards and, if used, should be securely fixed to the floor at their edges and at any joints.
- The slip resistance of steps is improved by the fitting of nosing's which protect the edge of the step from wear and help users to the place their feet more accurately on it. Care has to be taken that the nosing itself does not constitute a hazard.
- The design of stairways in buildings will need to take account of Technical Guidance Documents B (Fire Safety), K (Stairways, etc) and M (Access for People with Disabilities) produced by the Department of Environment, Heritage and Local Government.
- Adequate lighting, including the avoidance of glare and shadows, is necessary to expose slip /trip hazards. Higher lighting levels are needed where older people are present.
- Poorly sited or excessive signage can distract people who are then less likely to notice slip or trip hazards.
-

The weather

- Building entrances can become slippery due to the ingress of moisture, mud and debris in bad weather. Measures such as having a slightly higher internal air pressure in the vestibule or the provision of a suitably designed shelter or canopy above the entrance can reduce the ingress of rain. Another simple measure is the installation of doors that do not blow open in the wind.
- Where matting is provided it should be aligned with the way pedestrians use the entrance. It should be laid immediately inside the door entrance and extend across the full width of the door. The existence of wet footprints beyond the entrance or matting is usually a sign that existing controls are not sufficient.
- Where mats in mat-wells are prone to becoming waterlogged the provision of drainage holes should be considered.

Maintenance and cleaning procedures

- Floor cleaning procedures should be incorporated in the operation and maintenance procedures for a company. The procedure should specify the methods and materials to be

used as the use of the wrong cleaning method can increase the area of hazard and level of risk. The cleaning agent used should be suitable for the floor surface and the type of contamination encountered. A build -up of polish or detergent residues should be avoided. The drying of floors after cleaning is most important for the control of slip hazards. Staff should be informed, trained and supervised with regard to:

- Cleaning and drying floors
- Importance of dealing with spillages/leaks

"Cleaning as you go"

- Reporting hazards as they arise and any equipment defects contributing to slip hazards or problems with the cleaning equipment itself
- Prompt incident reporting
- Use of suitable footwear
- Cleaning should, where practical, be carried out when there are less people around.
- Cleaning activity should be organised so as to provide dry paths through areas being cleaned. It is better to restrict access to areas that are being cleaned by the use of barriers rather than depending on the use of cones or signs alone.
- Research has shown that forewarning people of a hazard can lead them to modifying their gait so as to anticipate the situation but attention must be paid to removing signs when the hazard has been dealt with; otherwise people will tend to ignore them if their experience tells them that the signs are always displayed irrespective of the conditions underfoot.
- Where existing unsuitable floor surfaces are identified, the hazard can be reduced by controlling contamination, using mats, treating the surface or in some cases replacing it altogether with a safer material.

Workspace users

- Where there is control over access to the workspace, the risk of falls can be reduced by the introduction of a "sensible shoe" policy i.e. no high heels or loose fitting shoes. In addition: Shoe soles should have deep cleating and a well defined tread pattern.
- Safety footwear may not always be slip-resistant and purchasers should check that it is suitable for the conditions under which it is going to be used.
- Slip resistant shoes will not remain so if they become worn or contaminated underfoot.
- The risk of slipping while barefoot is often greater than when wearing shoes, so this factor needs to be taken into account in shower areas and in other tiled areas associated with swimming pools, etc
- Disposable plastic overshoes can have poor resistance on smooth floors
- In other workspaces where there is general public access there will greater dependence on the selection of floor material in combination with maintenance regimes to control slip, trip and fall hazards.

Checks & Inspections

- Visual checks and Risk Assessments as required in each Functional Area

Information, Instruction & Training

Not applicable

Personal protective equipment required (last resort)

Not applicable

Initial Risk Rating (without any control measures)

Probability :	**2**	x	Severity	**3**	=	Risk Factor	**6 High RISK**

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2	=	Risk Factor	2 Low Risk

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet Lone Person Working	Ref: SWPS 010
	Date: March 09
	Assessed by: E. Bell

Hazards

- Persons working alone using hazardous chemicals or equipment may not be able to summons
- help in the event of an accident or spillage.
- Certain exit routes may not be available during out of hours working.
- Entrapment in areas or spaces due to negligence or accident

Person Exposed to Risk

☐ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Definition of lone working

Lone working/out of hours working is defined as follows

Any Laboratory / Experimental work carried outside of 9 am - 5 pm Monday – Friday when there are no persons aware of your work within calling distance.

Any other work undertaken outside of 7 am-10 pm Monday – Friday and during the hours of 9am - 6pm on Saturday, Sunday & Bank Holidays.

All buildings must be vacated by 6pm on Saturdays, Sundays and Bank holidays to allow for full lock up. At Christmas & Easter the campus will close down for a specified number of days and access will only be granted under exceptional circumstances .

Lone working includes carrying out field work in hazardous terrain or in areas where there is a risk to personal safety.

Lone working may also include carrying out routine maintenance work in isolated areas such as roofs or plant-rooms.

Controls

General

- Lone working in laboratories is not permitted unless a risk assessment has been carried out in conjunction with an academic supervisor and the risk is deemed to be low. Typical work that may be allowed includes work on PCs, microscope work, viewing plates, taking items in and out of incubator.
- The supervisor may allow working on high risk activities if the person is competent (typically an experienced member of staff) and a buddy is in attendance.
- The supervisor may allow work on medium risk activities for competent researchers (with or without a buddy present).
- Where a person is working alone without other persons within shouting distance then a phone or mobile phone must be readily available. They must also notify a colleague of their intention, how long they intend to be working in the isolated area, and check back with the colleague at an agreed, pre-determined time, when the work in the isolated area is complete.
- Field work in hazardous terrain or where there is a risk of personal injury as a result of confrontation must not be carried out alone (see SWPS Fieldwork).
- Hazardous experiments must not be left unattended overnight.

Out of hours access

- If out of hours work is required permission must be sought from the Head of Department.
- All persons requiring 'Out of Hours' access must be aware of what to do in the event of an emergency, i.e. what emergency exit doors are available, how to raise the alarm, where to go etc.
- The Head of School must provide Security with the names and locations of persons working out of hours. The person must contact Security on leaving the building.
- Persons authorised to work out of hours must not admit any other person to the building out of hours. Persons claiming to be authorised but without a swipe access card or key should be referred to Security for access.
- Where the fire alarm is activated in the building after hours, those evacuating the building must assemble at the building fire assembly point. Otherwise emergency services will assume that they are still in the building.
- Researchers or Staff members who in exceptional circumstances, due to the nature of their research work, require access during 'Lock-Up' must seek authorisation for such access from Buildings and Estates.

Checks & Inspections

Visual checks and Risk Assessments as required in each Functional Area

Information, Instruction & Training
Not applicable

Personal protective equipment required (last resort)

Not applicable

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	2-3	=	Risk Factor	4-6

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2-3	=	Risk Factor	2-3

Risk Assessment Review

As and when process changes or yearly

Lone working/Out of Hours working

	Name	Position	Date
Prepared by			
Reviewed by:			
Approved by			

Revision	Date	By	Description
1			
2			
3			

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Safe Work Practice Sheet Storage Areas	Ref: SWPS 019
	Date: July 09
	Assessed by: E.Roe

Hazards

Slips, trips, falls
Cut
Back Injury
Sprains
Falling object
Fire

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Storage of hazardous and non-hazardous substances and materials

Controls

Checks & Inspections

- Keep all pathways clear
- Do not climb on shelves or storage racks
- Do not climb on shelves to reach heights – use stepladders only
- Keep aisle ways clear
- Do not keep any hazardous materials and substances in general storage areas – they must be kept in designated protected store located in Maintenance Building.
- Store heavy items at low level.
- Store medium weight items on middle shelves.
- Store light items on high shelves.
- Store items on shelves in such a way that they can not fall off.
- Keep all hazardous materials and substances, papers, boxes, etc. away from electric heaters.
- Store material lengths or racking parallel to the aisle.
- Storage areas to be kept locked at all times.
- Only authorized personnel are allowed access to Storage Areas.
- Do not attempt to lift any loads unless you have received appropriate training in safe manual handling techniques.
- Smoking, eating and drinking is prohibited in all storage areas.

Information, Instruction & Training

Not applicable

Personal protective equipment required (last resort)

Not applicable

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	2	=	Risk Factor	4

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2	=	Risk Factor	2

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet Use of hand tools	Ref: SWPS 026
	Date: Aug 09
	Assessed by: E.Roe

Hazards

Cuts
Ejection of material
Eye damage
Stab injuries
Head injuries

Person Exposed to Risk

☐ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Using hand tools such as chisels, Stanley knives, hammers, drills etc.

Controls

- Only staff with appropriate training or experience may use hand tools.
- The tools should be checked before use for signs of wear and tear. Damaged items should be taken out of service for repair or replacement.
- No power tools or electrical equipment of greater voltage than 110 volts shall be used in external locations.
- Where power tools have to be used off the main supply the source of supply must be fitted with residual current devices (ELCB) rated at 30 mAmps at 30 msecs.
- All cable connections must be properly made; under no circumstances is insulation tape to be used for any repair or joint in extension.
- Power tools must be maintained in good condition with casing intact and label fitted showing voltage and other information. An annual formal documented inspection should be carried out by a competent person.
- Mains operated equipment must be electrically tested.
- Where there is a risk of particles hitting the eye, eye protection must be worn.
- Ear defenders will not normally be required as the duration of exposure is expected to be low and infrequent.
- Tools should not be left unattended in public areas when going for breaks.
- Staff should not repair tools unless they are trained to do so.
- Only use tools in the manner in which they were designed to be used.
- Return tools to the workshop at the end of each day.

Checks & Inspections

- Check all tools before each use.
- Annual electrical test for mains operated equipment.

Information, Instruction & Training

- Only trained staff may operate equipment. Training may be provided in house by another
- competent member of staff.

Personal protective equipment required (last resort)

Personal protective equipment varies with tool being used. Where there is a risk of flying particles then eye protection should be worn.

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	3	=	Risk Factor	6 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet Use of Ladders / Stepladders	Ref: SWPS 007
	Date: 10/05/2011
	Assessed by: P. Killeen Approved by: E. Roe

Hazards

- Physical injury due to fall of persons from ladder
- Objects dropped by ladder / stepladder user

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

NOTE:

The use of Ladders / stepladders is restricted to activities where the risk is deemed to be low (that it would be unlikely to cause injury), the work is of short duration (30mins max) or brief periods at a time, and where the risk assessment shows the use of other work equipment (e.g. working platforms) is not justified.

Low Risk is considered when: where the operator can maintain a handhold / grip on stile whilst placing a box on a shelf and where the user's both feet are fully supported on the same step / rung.

Ladders/ stepladders are not suitable for strenuous or heavy work or where the work involves carrying awkward objects, tools or equipment.

Work Description

The use of Ladders / Stepladders by staff is infrequent. As part of their work technicians on occasions access shelving and storage areas to gain access to materials or parts.

Controls

- Ladder work is restricted to work which can be carried out using one hand only and of short duration.
- The base of the ladder must be on firm and level ground.
- For extension ladders they must be at the correct angle of rest 75 degrees or a base to height ratio of 1:4 (1 out to every 4 units up) and made secured (tying at the top or bottom)
- Stepladders must be fully opened out.
- There must be no sideways loading.
- Maintain 3 points of contact (both feet on the same rung, firm grip on the stile or handrail)
- Over reaching from ladders / stepladders will be avoided.
- Do not work on the top 3 rungs of a ladder, or top 2 steps for stepladders (regardless of length)
- Do not straddle (or sit at the top) of an A frame ladder.

Checks & Inspections

- Ladders will be checked for the correct type of equipment for the job at hand.
- Ladders / Stepladders must be visually inspected before use.
- Inspection of ladders must be recorded on form GA3 for every 7 day of use or used for the first time.

Information, Instruction & Training

- Operatives will be instructed to the safe use of ladders and the hazards which are to be avoided.
- Operatives to follow the controls
- Operatives to report any defects
- A further risk assessment will be necessary where the work activity is deemed to be medium or a high risk.

Personal protective equipment required (last resort)

- PPE may be a requirement dependant on the Risk Assessment

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	2	=	Risk Factor	4

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2	=	Risk Factor	2

Risk Assessment Review

Risk Assessment will be reviewed periodically

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Safe Work Practice Sheet Use of cutters, scalpel and stanley knives	Ref: SWPS 027 Date: March 09 Assessed by: E. Bell

Hazards

- Cuts when taking blades in and out of handle
- Cuts while using equipment
- Cleaning staff receiving cuts if blades disposed of to general waste
- Eye injury if blade breaks while used with force for tasks other than cutting

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

A range of cutting equipment is used in some areas by staff and students

Controls

- Where possible retractable blades or safety knives will be used.
- Blades must be disposed of to a designated sharps bin with a closable lid. Blades must never be disposed of to general waste.
- Users should use only sharp blades – blunt blades require more force and their use may result in injury
- Users should cut away from the body keeping the restraining hand well away from the blade.
- Unsheathed blades must never be carried in pockets or bags.
- Unsheathed blades must not be left in drawers or toolboxes.

Checks & Inspections

- Knives cutters used in classroom situations should be visually checked annually and damaged equipment removed from circulation.

Information, Instruction & Training

Students receive specific instruction on safe use of blades

Personal protective equipment required (last resort)

Initial Risk Rating (without any control measures)

Probability : **2** x Severity **3** = Risk Factor **6 High Risk**

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability : **1** x Severity **2-3** = Risk Factor **2-3 Low Risk**

Risk Assessment Review

As and when process changes or yearly

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Appendix III

Specific Safe Work Practice Sheets

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Safe Work Practice Sheet Wiring / Building and Testing of Electrical Panels	Ref: SWPS ELT 001
	Date: 23/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Contact with incorrectly wired, damaged or exposed cables can result in electric shock, death or minor injuries. First, second or third degree burns. Secondary injuries resulting in musculoskeletal injuries, cuts and bruises, broken limbs and or broken fingers.

Slips, Trips and Falls
Poor housekeeping, personal belongings can result slips or tips causing falls and broken limbs, musculoskeletal injuries, broken fingers, cuts and bruises.

Manual handling
Rotating of work boards can result in broken limbs and or musculoskeletal injuries.

Explosions
Incorrect wiring of work panels can result in flying debris, loss of sight to one or both eyes, minor burns cuts and bruises.

Cutting and snipping
Cutting of excess wiring etc. can result tin flying debris, possible loss of sight or minor eye injuries. Serious or minor cuts to hands.

Mechanical
Flying objects (broken drill bits, flying material) loss of sight or minor eye damage, cuts and bruises. Entanglement of long hair or loose clothing minor cuts or bruises. Entanglement with rotating drill can result in minor cuts and bruising.

Temperature
Drilling can create hot surfaces resulting in minor burns when touched with bare hands.

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

The wiring / building of panels which caters for various voltages and testing.

Controls

- Students must be informed at induction about the importance of not energising panels on their own.
- Lecturers must be present when panels are being energised.
- Students can only energise panels under correct instruction and the supervision and instruction of their lecturer.
- The 3Φ 400v and Single Phase supply can be energised by a student under correct instruction and the direct supervision of the Lecturer.
- The key for 3Φ 400v and Single Phase supply is to be kept under the lecturers control at all times.

- Only one 3Φ 400v supply lead may be in use at any given time.
- Students may use Single Phase supply leads under correct instruction and the supervision of the lecturer.
- 3Φ 400v and Single Phase supply leads must be requested from the lecturer.
- 3Φ 400v and Single Phase supply leads must be returned to the lecturer when no longer required.
- It is against Part 3 Electricity of the Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299) for non-certified persons to work on live panels or equipment.
- Safety glasses must be worn when working on panels.
- Each student is required to have a full Tool Kit and a proper Toolbox.
- Tool Belts may be worn in workshop.
- Food or drinks must not be consumed or stored near work boards.
- Loose clothing must not be worn, for example, hoodies with string.
- Long hair must be tied back.
- The wearing of jewellery is not permitted.
- Maintain fingers clear of cutting tools.
- Always cut away from the body or bystanders.
- Maintain good housekeeping and work area free from personal belongings at all times.
- While carrying out a training exercise, tools must not be placed inside the panel. All tools, measuring equipment and instruments should be placed in the Toolbox. Lin bins to be provided on work boards for storage of tools when working on panels.
- The Toolbox should be placed in the space underneath the work boards. No tools, cable or any other obstruction should be left on the safety matting.
- Students are not permitted to rotate the workstations. The Electrical Technician or Class Attendant should be notified if the workstation is not in the correct position.
- Follow the manual handling training guidelines at all times.
- All damaged Power Leads, Sockets or equipment must be brought to the attention of the Lecturer, replacements may be obtained from the Technician or Class Assistant.
- Students should not attempt to repair any electrical items or cables.
- All conduit, Din rail etc. must be held in a suitable Vice when being cut or threaded.
- Individuals to exercise vigilance when using hand held tools for cutting and snipping.
- Hand held battery drills must be used when drilling is required.
- Do not touch drill bits or drilled material after drilling (allow to cool down).

Checks & Inspections

- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE
- All voltage power outlets to be checked monthly for tripping operations
- Ensure emergency shutdown devices are checked each term
- RCDs tested once per term
- Electrical circuits tested every 3 years

Instruction & Training

- Trained First Aider/CPR (available when live working is carried out)
- Electrical Technician to use personal alarm (man down monitor) when carrying out maintenance work as part of a safe system of work during “lone working”.
- Manual Handling training
- PPE training.

Further Information:

Part 3 Electricity of the Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299) www.hsa.ie

Electro-Technical Council of Ireland (ETCI) www.etci.ie/docs/ET215(2008).pdf.

National Standards Authority of Ireland (NSAI)

Personal protective equipment required (last resort)

- Employees and Students must wear safety boots or shoes while in the workshop.
- Students must wear safety glasses when working on panels or using power tools.

Initial Risk Rating (without any control measures)

Probability : **3** x Severity **3** = Risk Factor **9 High Risk**

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability : **1** x Severity **3** = Risk Factor **3 Low Risk**

Risk Assessment Review

As and when process changes or yearly

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Safer Work Practice Sheet Rotation of Electrical Workstations	Ref: SWPS ELT 002
	Date: 23/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Mechanical
Rotating workstation could lead to technician, aid or students becoming trapped resulting in musculoskeletal injuries (broken limbs, fingers, cuts and bruises) and spinal disc injury.

Manual Handling
Rotating workstations can result in musculoskeletal injuries, individual becoming trapped and or chronic back problems.

Slips trips and falls
Poor housekeeping around workstation can result in musculoskeletal injuries, cuts and bruises.

Ergonomics
Bolt lever handles on workstations could cause major or minor hand and finger injuries and back injuries. Overreaching to open bolt levers could result in musculoskeletal injuries.

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description
The Action of rotating Workstation Boards

HAZARD 1 Manual Handling

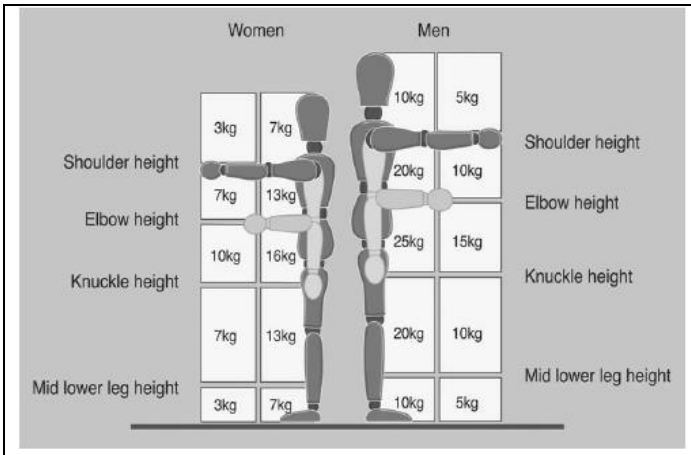
The workstations require rotation. The weights involved exceed the guidelines weights (see diagram below) set out by the Health and Safety Authority.

HAZARD 2 Ergonomics

A risk of physical injury when taking into account the following existing conditions:

- Weights Involved
- Force applied to rotate the board forward (when boards may drop back) and stopping the boards
- Twisting or turning of the body while carrying out this operation
- Twisting, stooping, reaching forward

The work boards – are:
• heavy
• bulky
• difficult to grasp
• unstable / unpredictable with rotation



Guideline weights issued by the Health and Safety Authority.

Controls

- No food or drinks to be consumed or stored at work stations.
- All mats at work stations must be kept free from clutter, personal belongings and tool boxes. Good housekeeping must be maintained and encouraged.
- At induction, students must be informed that they must not turn the work boards or work stations and that the lecturer or technician should be informed if required to turn the work board or station.
- Lecturer, technician or workshop aid must be notified if the workstation is not in the correct position.
- The technician and workshop aid at the end of each class or phase of works will rotate the workstations. There are a maximum of 16 workstations, all or some workstation may require daily rotating.
- The task of rotating the Electrical Work Boards must be carried out by both the technician and classroom aid, where the classroom aid is unavailable, further assistance must be sought from the plumbing / welding section.
- Follow the manual handling training guidelines at all times.
- When work boards are turned they must be bolted on the bottom position of work station.
- Bolt for rotating work station to pad locked when in set up position, the key to pad lock is to be kept under the technician's control.
- Bolts on workstations to be checked for spring and sliding functionality each block term.

Recommendations

1. Mesh Guarding to be installed at exposed ends of all rotating workstations.
2. Bolt levers on rotating workstations, work boards need to be replaced by more suitable ergonomic levers (presently, firm grip cannot be obtained).
3. Bolt levers on workstations positioned at wall of the workshop should be moved and fitted on wright hand side of workstation to accommodate wright handed operation.

Further controls agreed

- Automated device to be installed with remote switch / control button to rotate the workstations / boards. To ensure no additional hazards are introduced, the automated device will be phased in and installed and rigorously tested onto one of the workstations / boards. *Presently, a work in progress.*
- The automated device will eventually replace all manual effort at all workstations.

Personal protective equipment required (last resort)

- Employees and Students must wear safety boots or shoes while in the workshop.
- Students must wear safety glasses when working on workstations.

Initial Risk Rating (with existing control measures)

Probability : **2** x Severity **3** = Risk Factor **6 Medium Risk**

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after further controls outlined introduced)

Probability : **1** x Severity **3** = Risk Factor **3 Low Risk**

Risk Assessment Review

Risk reduction with regard to this activity must be an integral part of the Safety Management Program.

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Safe Work Practice Sheet Electrical Test Beds	Ref: SWPS ELT 003 Date: 23/07/2014 Revision No. 001 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Incorrectly connected, damaged or exposed wiring can cause electric shock, death or minor injuries. First, second or third degree burns. Secondary injuries resulting in musculoskeletal injuries, cuts and bruises, broken limbs and or broken fingers.

Slips, Trips and Falls
Poor housekeeping can result in falls form slipping and broken limbs, musculoskeletal injuries, broken fingers, cuts and bruises.

Explosions
Incorrectly connected wiring can result in flying component debris and loss of sight to one or both eyes, minor burns cuts and bruises.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Students are required to complete a number of experiments. All results are entered into the report by the student as the information is being obtained.

Controls

- Students are permitted to carry out this task, under correct instruction and the lecturer or technicians supervision.
- No food or drinks to be consumed or stored near work stations.
- Safety glasses must be worn when working on test beds.
- The Test Beds operate to dangerous High Voltages from 230v to 400v; under no circumstances is the student permitted to use these supplies without the consent of the Lecturer and the presence of the technician.
- The supplies are controlled by means of a Key switch and may only be issued by students while under the supervision of the Lecturer.
- When the experiment using any of these supplies is completed, the Key must be returned to the Lecturer without delay.
- The safety Keys must be at all times maintained in a locked Key safe under the control of the Technician/Lecturer or class aid.
- Experiments conducted by students on the work stations must use safety leads for all connection and under the supervision of the lecturer.
- While conducting the experiment the student should take the necessary readings with the lecturer and record data in the Lab Report notebook.
- On completing the electrical circuit wiring, students must have the wiring checked by the Lecturer before any connection is made to the supply system.
- All wiring is to be returned to the appropriate retainers and all components are to be replaced in their allotted storage press or shelf.
- Any damaged equipment must be returned to the Technician for repair or disposal. Students are not permitted to repair any equipment.
- Maintain good housekeeping and work area free from [personal belongings at all times.

Checks & Inspections

- Students are supervised by lecturing staff and technical staff during this procedure
- Lecturers and Technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE
- All voltage power outlets to be checked monthly for tripping operations
- Ensure emergency shutdown devices are checked each term
- All RCDs back to the electrical main supply panel tested once per term (conducted and recorded by the Technician)
- Electrical circuits tested every 3 years

Information, Instruction & Training

- Students are regularly informed of the dangers and are not permitted to use power supplies without the direct supervision of the lecturer or technician.
- Trained First Aider/CPR (available when live working is carried out)

Further Information:
Part 3 Electricity of the Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299) www.hsa.ie
Electro-Technical Council of Ireland (ETCI) www.etci.ie/docs/ET215(2008).pdf.
National Standards Authority of Ireland (NSAI)

Personal protective equipment required (last resort)

- Employees and Students must wear safety boots or shoes while in the workshop.
- Students must wear safety glasses when working on panels or using power tools.

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Final Testing of Student Exercise	Ref: SWPS ELT 004 Date: 23/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Exposure to incorrectly wired, damaged or exposed cable can cause electric shock, death or minor injuries. First, second or third degree burns. Secondary injuries resulting in musculoskeletal injuries, cuts and bruises, broken limbs and or broken fingers.

Explosion
Incorrect wiring can result in flying component debris, loss of sight to one or both eyes, minor burns cuts & bruises.

Manual Handling
Pulling and wheeling of trolleys can result in musculoskeletal injuries.

Slips, Trips and Falls
Poor housekeeping, personal belongings, trailing cables can result in broken limbs, musculoskeletal injuries, broken fingers, cuts and bruises.

Tipping trolley
Damaged trolley wheel can result in falling trolley and lower body impact injuries

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Students are required to test single and three phase motors by wiring them to their own previously wired panels. Motors must be brought over to their workstations.

Controls

- Students are permitted to carry out this task, under correct instruction and the lecturer or technicians supervision.
- Food or drinks must not be consumed or stored near work stations.
- Safety glasses must be worn when working testing motors and control panels.
- Long hair must be tied back.
- Loose clothing must not be worn.
- Follow the manual handling training guidelines at all times.
- Panels operate on dangerous High Voltages from 230v to 400v; under no circumstances is the student permitted to use these supplies without the consent of the Lecturer and the presence of the technician.
- The supplies are controlled by means of a Key switch and may only be issued by students while under the supervision of the Lecturer.
- On completion of final testing the Key must be returned to the Lecturer without delay.
- The safety Keys must be at all times maintained in a locked Key safe under the control of the Technician/Lecturer or class aid.
- Testing conducted by students on the work stations must use safety leads for all connection and under the supervision of the lecturer.
- Any damaged equipment is to be returned to the Technician for repair or disposal. Students are not permitted to repair any equipment.
- Single and three phase motors should be bolted to trolleys on wheels.
- Defected wiring must be reported to the lecturer or technician.
- Technician must carry out repairs on defective wiring or motors.

- Trolleys must be placed within close proximity of workstation to minimise trailing cables along the floor.
- On successful completion of the exercise the student must disconnect the wiring of the trolley from the workstation and return the trolley to the storage area or to another student awaiting trolley.
- Trolleys and wheels must be maintained in good working order and fit for purpose. Inspect for damage or defects prior to use.
- Maintain good housekeeping and work area free from personal belongings at all times.

Checks & Inspections

- Full visual inspection of motor and wiring on trolleys must be carried out by student prior to use.
- Students are supervised by lecturing staff and technical staff during this procedure
- Lecturers and Technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE
- All voltage power outlets to be checked monthly for tripping operations
- Ensure emergency shutdown devices are checked each term
- All RCDs back to the electrical main supply panel tested once per term (conducted and recorded by the Technician)

Information, Instruction & Training

- Students are regularly informed of the dangers and are not permitted to use power supplies without the direct supervision of the lecturer or technician.
- Trained First Aider/CPR (available when live working is carried out)
- Manual Handling training

Further Information:

Part 3 Electricity of the Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299) www.hsa.ie

Electro-Technical Council of Ireland (ETCI) www.etci.ie/docs/ET215(2008).pdf.

National Standards Authority of Ireland (NSAI)

Personal protective equipment required (last resort)

- Employees and Students must wear safety boots or shoes while in the workshop.
- Students must wear safety glasses when working on panels or motors.

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Demonstration of Various Alarm Systems	Ref: SWPS ELT 005 Date: 23/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Incorrectly wired, damaged or exposed wires can result in electric shock, death or minor injuries. First, second or third degree burns. Secondary injuries resulting in musculoskeletal injuries, cuts and bruises, broken limbs and or broken fingers.

Manual Handling
Carrying of standing board can cause musculoskeletal injuries.

Slips, Trips and Falls
Poor housekeeping, standing on standing board can result in trips and falls causing broken limbs, musculoskeletal injuries, broken fingers, cuts and bruises.

Chemicals
Inhalation of aerosol spray for smoke detector can cause mild to moderate irritation of the tissue of the nose, throat and upper respiratory system and eyes.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Teaching students the functionality of different alarm systems and using an aerosol smoke detector tester.

Controls

- Food or Drink must not be consumed or stored at demonstration area.
- Long hair must be tied back.
- Loose clothing must not be worn.
- Inspect the electrical cable and plugs for damage or defects prior to use.
- Safety glasses must be worn.
- Alarm systems must be permanently installed / wired on demonstration boards by technician.
- Technician to carry out yearly inspection of demonstration alarms.
- Power Supply lead for alarms must be obtained through lecturer or technician.
- Alarm demonstration area must be kept tidy and free from clutter at all times.
- Students are not permitted to carry out any electrical work or wiring of alarm panels.
- Students must not open alarm panels.
- Students are only permitted to operate the function keys on all alarm panels.
- Students that require the step board to stand on must request it form the technician / Class Aid.
- Follow the manual handling guidelines when carrying the step board.
- Step board must have a non slip surface and be in good physical order and fit for purpose.
- Caution must be exercised by employees and students when using step board, when step board is no longer required the technician/ Class aid should be requested to take it back to storage.
- Students are permitted to use smoke detector spray tester, this must be obtained from the technician.
- Caution must be adhered to when applying smoke detector spray and apply sparingly, avoid contact with skin and do not inhale.
- Return the smoke detector aerosol to the technician when not in use.

Checks & Inspections

- Step board must be inspected prior to use
- Power supply leads must be inspected prior to use
- Students are supervised by lecturing staff and technical staff during this procedure
- Lecturers and Technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE
- All voltage power outlets to be checked monthly for tripping operations
- Ensure emergency shutdown devices are checked each term
- All RCDs back to the electrical main supply panel tested once per term (conducted and recorded by the Technician)

Information, Instruction & Training

- Students informed of the dangers and hazards of electricity
- Trained First Aider/CPR (available when live working is carried out)
- Manual handling
- MSDS

Personal protective equipment required (last resort)

- Employees and Students must wear safety boots or shoes while in the workshop.
- Students must wear safety glasses when working on alarm boards and when using smoke detector aerosol spray.

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	3	=	Risk Factor	6 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Preparation of Student Work Materials	Ref: SWPS ELT 006 Date: 23/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Lifting and carrying trays with work materials can result in acute or chronic musculoskeletal injuries, lower back injuries.

Ergonomics
Pushing and pulling of trolleys can result in acute or chronic lower back injuries.

Slips Trips and Falls
Poor Housekeeping can result falls & broken limbs, musculoskeletal injuries, broken fingers, cuts & bruises.

Sharps
Damaged steel trolley and broken plastic trays can cause major to minor cuts to hands.

Tipping trolleys
Damaged trolley wheels, overloaded trolley can result in falling trolley and lower leg injuries.

Falling boxes
Carrying of heavy loads or too many items can result in dropping of boxes and cause lower limb impact injuries.

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Technicians / Class Aids are required to gather and prepare work materials (switches, connectors etc.) for students in plastic trays, boxes etc. and place them into trolleys for work stations distribution.

Controls

- Maintain good housekeeping and work area free from personal belongings at all times.
- Technician or class aid may only carry out this duty.
- Floor must be kept clean and free from obstruction and rubbish.
- Trolleys and trays must only be used by Technician or Class Aid
- Follow manual handling training guidelines.
- Inspect the trolley and tray for damage or defects prior to use, do not use trolleys or trays if damaged or defected.
- Trays must not be over filled or over loaded.
- Loaded trays must be placed on trolleys for dispensing to workstations.
- Trays must be dispensed prior to commencement of student block.
- Technician / Class Aid must collect trays from students when empty.
- Empty trays must be placed back onto trolleys and returned to storage area.
- Empty trolleys and trays must be neatly stored away when not in use.
- Do not over fill boxes with components.

- Never carry more than one box at a time.

Checks & Inspections

- Trolleys and wheels must be inspected prior to use.
- Trays must be inspected prior to use.

Information, Instruction & Training

- Manual handling

Personal protective equipment required (last resort)

- Safety boots

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	2	=	Risk Factor	4 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2	=	Risk Factor	2 Low Risk

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Safe Work Practice Sheet Portable Wheeled White Boards	Ref: SWPS ELT 007 Date: 23/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Ergonomics / Manual Handling
Pushing and pulling white boards can result in lower back injuries, musculoskeletal injuries.

Slips Trips and Falls
Poor Housekeeping can result in broken limbs, musculoskeletal injuries, broken fingers, cuts and bruises.

Chemicals
Vapours from white board markers can cause acute or chronic respiratory illness.

Tipping white board
Wheels of trolley fail and result in white board falling over and causing upper and lower body impact injuries.

Moving trolley
Leaning against static white board can result in impacting other individuals.

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Lecturers use tall white boards mounted on purpose built steel frame trolleys for mathematical, circuitry etc. and theory demonstrations.

Controls

- Students are not permitted to move the white boards on trolleys.
- Lecturer, technician or class assistant are permitted to move the white boards.
- Mounted white boards must only be used on purpose built trolleys.
- Inspect the white board and trolley for damage or defects prior to use.
- Do not use a damaged or defected trolley or white board and remove form use for repair
- Unlock wheels before moving trolley and use both hands when pushing or pulling into place or back to storage.
- Lock wheels of trolley when in use or in storage.
- Do not lean against white boards or frame.
- Follow the manual handling guidelines.
- Only use nontoxic white board markers.
- Permanent markers must not be used.

Checks & Inspections

- Wheels and trolleys to be inspected prior to use
- White board must inspected prior to use for integrity of security and mounting on steel frame of trolley

Information, Instruction & Training

- Manual Handling training

Personal protective equipment required (last resort)

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	2	=	Risk Factor	4 Medium Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2	=	Risk Factor	2 Low Risk

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Safe Work Practice Sheet Trolley with Three motors	Ref: SWPS ELT 008 Date: 23/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Pushing and pulling trolley with motors can result in lower back injuries, musculoskeletal injuries.

Slips Trips or Falls
Poor Housekeeping can cause in slips trips and falls resulting in broken limbs, broken fingers, cuts and bruises.

Tipping trolley
Damaged trolley wheels can result in falling trolley and lower body impact injuries.

Person Exposed to Risk

☑Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Technician and class assistant are required to position single phase and three phase motors permanently mounted on a trolley to the student's workstation/s.

Controls

- Loose clothing must not be worn.
- Students must not bring the trolley with three motors to their workstation.
- Students are permitted to use the trolley, under correct instruction and the supervision of the lecturer or technician.
- Trolley must be maintained in good working order and fit for purpose.
- Do not use trolley if there is damage to the wheels, motors or electrical wiring.
- Repairs to the trolley must be carried out by technician.
- Request the technician and Class Aid to bring the trolley to the required workstation.
- Any damaged equipment is to be returned to the Technician for repair or disposal.
- Single and three phase motors should be bolted to trolley base on wheels.
- Trolley must be placed within close proximity of workstation to minimise trailing cables on the floor.
- Students must exercise caution if adjustment of trolley at their workstation is required.
- Students must request technician / class aid to remove the trolley from their workstation on completion of exercise.
- Workshop floor space must be maintained free from clutter and rubbish.

Checks & Inspections

- Trolley must be inspected prior to use (wheels electrical wiring and motors).
- Lecturers and technicians to monitor compliance with control measures.
- Lecturers and technicians to monitor the wearing of PPE.

Information, Instruction & Training

- Follow manual handling training guidelines

Personal protective equipment required (last resort)

- Employees must wear safety boots or shoes while in the workshop.

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	2	=	Risk Factor	4 Medium Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2	=	Risk Factor	2 Low Risk

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Safe Work Practice Sheet Hand Held Tools for Electrical	Ref: SWPS ELE 009 Date: 23/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Carrying out repair work on devices connected to the mains can result in electrocution-death or first second and or third degree burns.

Sharps
Incorrect handling and misuse of saws, screwdrivers, snips etc. can result in lacerations, puncture wounds or abrasions to hands and fingers.

Damaged Tools
Poor storage, misuse, wear and tear of tools can result in damage to the handles resulting in minor cuts and blisters to hands and fingers. Repairing or replacing damaged cutting tools, saw blades etc. can result in lacerations the hands and fingers.

Falling Hand Tools
Incorrect hold of, tool lying at the workbench edge, carrying too many at a time can result in a falling hand tool causing lower leg and feet puncture wounds, cuts and bruises.

Slips Trips and Falls
Poor Housekeeping, personal belongings, falling hand tools lying, waste cut offs from wiring and components etc. on the ground can result in slips and trips and fall impact head injuries.

Ergonomics
Use of tools for extended periods of time can result in work related upper limb disorder.

Flying Debris
Use of various hand tools can result in flying debris from PCBs, wires, connector pins etc. resulting in the loss of sight.

Mechanical
Fingers or hands in between closing jaws or blades of hand tools can result in pinching of fingers or severing of finger tips.

Inadvertent Stabbing
Using your body as resting support for a component, PCB or material etc. resulting in self stabbing.

Manual Handling
Lifting or carrying equipment for repair or modification can result in acute lower back injuries.

Person Exposed to Risk

☑Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Hand held tools are required to enable operators to build and or repair or modify electrical wiring etc. The hand held tools can comprise of wire strippers, files, rasps, phase testers, screwdrivers, snips, plyers, hack saws, and hand held drills etc.

Controls

- Students are permitted to use hand held tools, under correct instruction and the lecturer or technicians supervision.
- Students must request the tools from the lecturer or technician.
- Ensure that equipment or machinery being repaired is disconnected and isolated from the mains supply prior to conducting electrical work, repairs etc.
- Inspect the tool for damage or defects prior to use, do not use if damaged or defected in any way and hand back to lecturer or technician for removal from use.
- Wear safety glasses when using hand held tools.
- Always lift or carry a hand tool by its handle.
- All hand tools must be used in accordance with the manufacturers intended use and design.
- Students are not permitted to carry out repairs to damaged tools. All repairs, replacement blades or cutting tools must be carried out by a lecturer or technician.
- Ensure that tools required are resting in from the workbench edge.
- Falling hand tools must be picked up from the ground immediately.
- Maintain good housekeeping and work area free form personal belongings at all times.
- Ensure that the floors are swept clean from material cut offs as soon as possible.
- Avoid the use of hand tools for extended periods of times by tending to other duties where possible or periodically take small breaks.
- Always cut and snip materials away from the body and never in the direction of bystanders or other workbenches.
- Never place hands or fingers in between the closing jaws of plyers or snips etc. and ensure to keep hands and fingers at a safe distance of jaws when in use.
- Never use your body as a supporting aid for work being carried out, always use a work bench as a means of support.
- Follow the manual handling training guidelines at all times.

Checks & Inspections

- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

Information, Instruction & Training

- PPE training
- Manual Handling Training

Personal protective equipment required (last resort)

- Safety Glasses
- Safety Boots

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability : **1** x Severity **2** = Risk Factor **2 Low Risk**

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Safe Work Practice Sheet Corded and Cordless Hand Held Drills	Ref: SWPS ELT 010 Date: 23/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Poorly or incorrectly connected, fitted, damaged or defected electrical cables and plugs can result in electrocution-death or first, second and or third degree burns.

Slips Trips and Falls
Poor housekeeping, personal belongings or a trailing electrical cable, hand tool lying on the ground can result in slipping and tripping causing fall impact head and body injuries.

Mechanical
Entanglement of long hair or loose clothing with rotating tool or chuck head can result in minor cuts and bruises. Cuts to hands and fingers when in contact with rotating cutting tools.

Ergonomics
Operating the tool in crunched awkward positions and for extended periods of time can result in acute or chronic lower back and or upper body musculoskeletal injuries**.**

Vibration / Torque
Drilling various materials can result in vibration and cause hand and vibration injuries (white finger). Drilling various materials can result in sprains to the wrist and elbow when the drill comes to a sudden stop.

Flying Debris
Drilling various materials can generate flying debris (swarf) and result in loss of sight, drill bits can shatter when in use and fly resulting in loss of sight or minor cuts.

Noise
Drilling various materials can result in the generation of noise and cause temporary hearing discomfort**.**

Sharps
Drill bits can contain sharps and result in minor lacerations to the hands and fingers when handled.

Falling Machine
Unsecure hold of hand tool when operating it, hand tool placed on the edge of a work bench can result in a falling tool and cause lower leg and feet impact injuries.

Person Exposed to Risk

☑Students ☑ Employees ☐ Public☐ Contractors ☐ Visitors

Work Description

The hand tools are used for drillings holes or screws into or cleaning down various materials.

Controls

- Students are permitted to use the equipment, under correct instruction and the lecturer or

technicians supervision.

- Where possible always use a battery operated or 110v drill. If required to use a 240v drill ensure that it is plugged in to a socket with a Residual Control Device (RCD).
- 240v power tools are not permitted to be used for external work.
- Inspect the electrical cable, plugs and drill for damage or defects prior to use.
- Do not use if cable or drill is defected or damaged in any way and remove from use for repair by a competent person or safe disposal of.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Avoid the trailing of electrical cables where possible.
- Never leave a hand tool lying on the ground, use a nearby work bench to rest it on.
- Loose clothing must not be worn when operating the machine.
- Long hair must be neatly tied back or a well fitted cap worn.
- Never touch a rotating cutting tool.
- Never assist in stopping or slowing down a rotating tool or chuck head.
- Do not use the hand tool for extended periods of time and tend to other duties for periods of rest or split the work load with another work colleague if possible.
- Maintain a firm and secure hold of the hand tool when drilling materials.
- Always place the hand tool in from the edge of a work bench when not in use.
- Wear safety glasses when drilling materials.
- Never touch swarf with bare hands.
- Wear safety hearing protection when required.
- Always use the drill as intended by the manufacturer.
- Never hold or handle a drill bit by its cutting tool head, wear gloves if required.
- Never leave a drill unattended and return to storage when no longer required.
- Always hold the tool with both hands when drilling materials.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School.
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

Information, Instruction & Training

- PPE training.
- Safe use of operating the tool.

Personal protective equipment required (last resort)

- Safety Glasses
- Safety Boots
- Safety Gloves
- Hearing protection

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**

Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Soldering – (Manual Soldering Iron)	Ref: SWPS ELT 011 Date: 23/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Poorly fitted, maintained, damaged or defected electrical cables can result in electrocution-death, first second and or third degree burns.

Hot surfaces
Contact with heated soldering iron or melted metals can result in first second and or third degree burns to the hands and fingers.

Fire
Combustible liquids (alcohol etc.) igniting when in contact with hot soldering iron resulting in fire and minor burns and respiratory illness from smoke inhalation.

Chemicals
Handling alcohol, flux etc. can result in acute or chronic skin disease and illness and minor skin irritation. Inadvertent ingestion of lead from contaminated hands resulting in central nervous system illness and disease.

Fumes
Inhalation of fumes from soldering can result in acute or chronic respiratory illness or disease.

Falling object
Soldering equipment placed at work bench edges can fall and cause minor burns, cuts and bruises to the legs.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Soldering is the process of joining two metals by the use of a solder alloy and heated electrical soldering iron. Solder for electronics is pre manufactured and can be made up of tin and lead of varying mixing ratios, lead free solder can also be obtained. Solder can melt at temperatures from 183 C (361 F) to 261 C (420 F) and change to a flowing hot liquid. The heated flowing liquid solder binds to Printed Circuit Boards and components where heat is also applied via the soldering iron.

Controls

- Food or drinks is not permitted in the electrical lab.
- Students are not permitted to use the equipment.
- Inspect the soldering iron cable and plugs for damage or defects prior to use.
- Do not use the iron if cable or plug is damaged or defected in any way and remove form use for repair or replacement.
- Competent persons must only carry out electrical repairs.
- Ensure the Iron is switched off prior to use.
- Ensure the extraction on the soldering unit is working effectively prior to use.
- Flammable solvents are not permitted in the vicinity of hot surfaces or materials.
- All flammable solvents are stored in small quantities in the technical support office/store. If solvent is required ask the lecturer, technician for the solvent.
- Where solvents (flux, alcohol) are being used, use a small plastic pipette for dispensing.
- Soldering irons must be kept clear of combustible materials.
- Soldering irons must be switched off when not in use and returned to storage.
- Ensure the soldering equipment in use is securely placed in from the work bench edge.
- All soldering must be performed on the work bench edge.

- Where possible use substitute non lead solder.
- Never put hands or fingers to your mouth when soldering.
- Always wash your hands thoroughly when finished soldering.

Checks & Inspections

- Regular inspections and maintenance to be carried out on all soldering irons and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE
- Ensure filter on iron is working (replace filter if necessary)

Information, Instruction & Training

- Chemical Handling Training
- MSDS

Personal protective equipment required (last resort)

Safety glasses must be worn when soldering.

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	3 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet Cleaning of the Electrical Workshop	Ref: SWPS ELT C 001 Date: 23/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Contact with poorly fitted, exposed or damaged electrical cables can result in electric shock, death or minor injuries. First, second or third degree burns. Secondary injuries resulting in musculoskeletal injuries, cuts and bruises, broken limbs and or broken fingers.

Manual Handling
Pushing and pulling hoover/buffer, lifting chairs can result in lower back injuries, musculoskeletal injuries.

Chemicals
Contact with liquid cleaning chemicals can cause burns to the eyes, hands, face and other body parts. Inhalation of chemicals can cause acute wheezing or chronic asthma. Ingestion of chemicals can cause irritation to the stomach lining.

Slips Trips and Falls
Poor Housekeeping, wet floors can cause slips, trips and falls resulting in broken limbs, musculoskeletal injuries, broken fingers, cuts and bruises.

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☑Contractors ☑ Visitors

Work Description

Class aid is required to clean the floors of the electrical work shop by means of hoover, buffer, vacuum liquid sucker and liquid chemicals.

Controls

- Maintain good housekeeping at all times.
- Students, others employees, contractors and visitors must not be present when cleaning is in progress.
- Safety glasses, boots and gloves must be worn at all times of cleaning.
- Safety signage must be used when cleaning in progress.
- Inspect electrical equipment and cables for damage or defects or damage prior to use.
- Do not use the equipment if damaged or defected in any way and remove form use for repair or replacement.
- Class Assistant must not carry out repairs on cables, plugs or damaged cleaning machine.
- Competent persons must carry out all electrical repairs on machinery and cleaning equipment..
- Never transport cleaning equipment by pulling on the electrical cables.
- Chemicals must be stored (under lock and key controlled by technician) away in a designated area.
- Chemicals must remain in original containers with original Identification label description.
- Do not store any personal belongings with chemicals.
- Liquid waste (liquid vac hoover, bucket etc.) must be disposed of to external drains.
- Care must be taken when moving or lifting class furniture (seek assistance if required), use a pallet truck if required.
- Follow manual handling training guidelines at all times.
- When cleaning machinery is in use, trailing electrical cables must be draped over shoulder of the operator.
- Machinery must be returned to storage when no longer required.

Checks & Inspections

- Cables and Plugs on electrical machines must be checked before use.

Information, Instruction & Training

- Manual Handling training.
- Chemical handling training.
- PPE training
- MSDS

Personal protective equipment required (last resort)

- Glasses
- Boots
- Gloves

Initial Risk Rating (without any control measures)

Probability : **3** x Severity **3** = Risk Factor **9 High Risk**

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability : **1** x Severity **3** = Risk Factor **3 Low Risk**

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet Disposal of Waste Rubbish in Bins	Ref: SWPS ELT C 002 Date: 23/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual handling
Lifting, pulling and pushing of bins can result in musculoskeletal injuries, lower back, hand, arm and finger strain.

Dust
General workshop dust (may contain plastic and metal filings) can cause irritation to one or both eyes. Respiratory injury may occur due to inhalation of dust, resulting in an acute effect (wheezing) or chronic effect (Asthma).

Sharps
Handling exposed metal wire and plastic cut offs can cause minor cuts to hands and fingers. Handling plastic sharps from damage bins resulting in lacerations to the hands and fingers.

Falling Bins
Handle on the bin fails due to been damaged and results in falling bin causing impact lower body injuries.

Slips, trips and falls
Damaged leaking bin can result in debris causing trip and slip hazards and impact falls and injuries. Over filled bins can result in slipping hazards causing fall injuries.

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Class assistant is required to empty a plastic bin or bins (on a daily basis) from the electrical work shop into a skip adjacent to the electrical workshop.

Controls

- Safety glasses, boots and gloves must be worn when carrying out waste bin duties.
- Over filling of buns must be prevented, bins must be emptied at the end of every day or when required.
- Follow manual handling training guidelines when emptying bins.
- Do not physically handle waste in bins.
- Waste bins must be emptied prior to class lecture commences or after completion of class lecture.
- Bring one bin at a time to the skip or use a trolley to transport more than one bin.
- Key to the padlock on gates where skip is located must be made available for class assistant to use.
- Open the doors of the steel skip prior to the decanting of waste.
- Empty waste bin into the skip and return waste bin to workshop area or on trolley for transport back to workshop.
- Replace bin/s and trolley back to their designated storage areas.
- Plastic bins must be fit for purpose and free from defects (sharp plastic edges, cracks, holes etc.)

Checks & Inspections

- Ensure that the plastic bin handles are in good order and that the bin is free from sharp pieces of plastic or cracked plastic.

Information, Instruction & Training

- Manual handling training.
- PPE training

Personal protective equipment required (last resort)

- Safety glasses
- Gloves
- Boots

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	2	=	Risk Factor	4 Medium Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2	=	Risk Factor	2 Low Risk

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet Manual Handling	Ref: SWPS 09
	Date: 30/03/2011
	Approved by: E.Roe.

Hazards

Incorrect method of lifting
Attempting to lift something which is to heavy
Lifting sharp/awkward shapes
The main injuries associated with manual handling and lifting are:
Back strain, slipped disc, hernia,
Lacerations, crushing of hands or fingers.
Repetitive Strain Injury.
Bruised or broken toes or feet.
Various sprains, strains, etc.

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Staff and students may be required to lift or move heavy items from time to time including large pieces of wood, bags of aggregate, metal piping, moving rotating electrical boards, pushing/pulling trolleys and lifting engines and transmissions and various motor parts

Controls

- Risk assessments must carried out on manual handling tasks normally performed by staff. As a rule of thumb an assessment is required where weights are above the guideline weights set out by the Health and Safety Authority and reproduced overleaf in figure 1. The assessment should be in writing and set out on form 1 Manual handling assessment attached to this procedure.
- Manual handling will be avoided where possible. Mechanical or other means of moving or lifting will be used such as trolleys and winches.
- Staff will be provided with manual handling training where manual handling is a regular part of their job.
- Seek assistance where possible when lifting heavy items.

Consideration must be given to the arrangement of stored items so that heavier items are not stored near floor or above shoulder height.

Risks

The injuries associated with objects involving, lifting, lowering, maneuvering and handling objects are:

- Back injury, including slipped disks. The effect of the injury may be cumulative over a period of years (as with chronic backache).
- Pulled muscles and strained ligaments.
- Note: once the back or any other part of the body “goes”, then it is easier to go again.

Primary controls

- Trained in the correct manual handling techniques and requirements
- Whenever and wherever possible and practicable use the correct mechanical means to lift, lower or manoeuvre heavy or awkwardly shaped loads.
- Split large loads into several smaller loads if possible.

Basic controls

1 Assessment

Carry out the following assessment process before you begin:

- Is it too heavy, too large, unwieldy or unstable?
- Will it require an unstable body posture position?
- Is the ground, floor or surface uneven or slippery?
- Are you able to maintain good posture while lifting?
- Will it require excessive lifting, lowering or carrying distances?
- Are you physically suited to carry out the task (e.g. physique, fitness, body strength)?
- Are you wearing suitable PPE (e.g. gloves, safety footwear)?

2 Safe to Manual Handle

When your assessment indicates that you can safely undertake the manual handling task, then proceed as detailed in section 3

Even when considered safe you should still use the correct mechanical means whenever and wherever possible and practicable.

3 *If there is no alternative way then:*

Protect your back

- If you must lift, carry and move an object yourself or with others, then you must do so in accordance with the correct techniques that you have learned in training. These correct techniques are summarised as follows:
- Lifting: Stand close to the load, bend the knees, not the back. Get a firm grip of the load and rise up straight.
- Carrying: Keep the load close to the body, with back straight, and turn by pivoting your feet.
- Lowering: Lower the entire body bending the knees, with back straight.

Special Controls
Loading, transporting
& off-loading materials

- Use mechanical means to load heavy and awkward loads
- Wear gloves and boots to protect body from getting trapped between the load and any other surface.
- Secure and store safely on the transport vehicle

Checks & Inspections

- Senior technician to monitor that correct manual handling technique is being used.
- Trolleys should be visually checked before use. Trolleys with damaged wheels should be taken out of service.

Information, Instruction & Training

- Manual Handling Training provided to relevant staff. Manual Handling activities are monitored and refresher training and /or reinstruction is an integral part of the safety management programme.

Personal protective equipment required (last resort)

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	**High Risk**

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	2	x	Severity	1-2	=	Risk Factor	2-4 Low-medium risk

Risk Assessment Review

As and when process changes or yearly

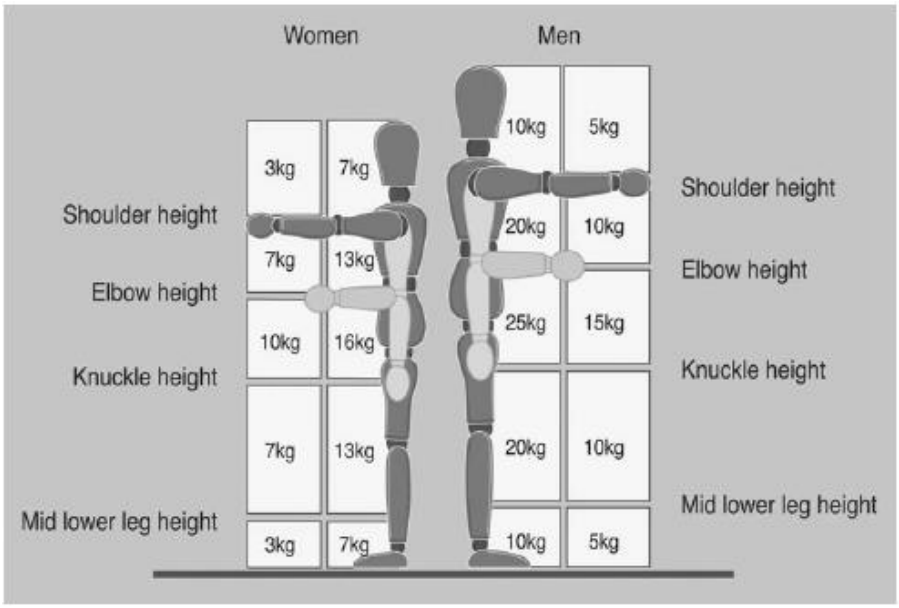

Figure 1. Guideline weights issued by the Health and Safety Authority.

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Form 1 Manual handling risk assessment

Section A – Preliminary *** Circle as appropriate**

Job Description Factors beyond the limits of the guideline weights? (See SWPS Manual handling)	Is an assessment needed? (i.e. Is there a potential risk for injury, and are the factors beyond the limits of the guidelines?) Yes / No*

If 'yes' continue. If 'no' the assessment need go no further.

Operations covered by this assessment (detailed description): Locations: Personnel involved: Date of assessment:	Diagrams or other information:

Section B – See over for detailed analysis

Section C – Overall assessment of the risk of injury? Low/Med/High*

Section D – Remedial action to be taken:

Remedial steps that should be taken, in order of priority: 1. 2. 3. 4. 5. 6. 7. 8.
Date by which action should be taken:
Date for reassessment:
Assessor's name: Signature:

Section B – More detailed assessment, where necessary:					
Questions to consider:	If yes, tick appropriate level of risk			Problems occurring from the task (Make rough notes in this column in preparation for the possible remedial action to be taken).	Possible remedial action (Possible changes to be made to system/task, load, workplace/space, environment. Communication that is needed.
	Low	Med	High		
The tasks – do they involve: • holding loads away from trunk? • twisting? • stooping? • reaching upwards? • large vertical movements? • long carrying distances? • strenuous pushing or pulling? • unpredictable movement of loads? • repetitive handling? • insufficient rest or recovery? • a work rate imposed by a process?					
The loads – are they: • heavy? • bulky / unwieldy? • difficult to grasp? • unstable / unpredictable? • intrinsically harmful (e.g. sharp / hot)?					
The working environment – are there: • constraints on posture? • poor floors? • variations in levels? • hot/cold humid conditions? • strong air movements? • poor lighting conditions?					
Individual capability – does the job: • require unusual capability? • hazard those with a health problem? • hazard those who are pregnant? • call for special information / training?					
Other factors: Is movement or posture hindered by clothing or personal protective equipment?	YES / NO				

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Safe Work Practice Sheet Electrical Safety	Ref: SWPS 08
	Date: 30/03/2011
	Approved by: E. Roe

Hazards

- Electrocution
- Electric shock
- Burns
- Inadvertent starting of machines

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☑ Contractors ☐ Visitors

Work Description. A range of electrical appliances are used in the School. This Safe Work Practice Sheet covers Portable Appliance Testing, general electrical safety, lock out procedure

Controls

- Installation or repair work may only be carried out by qualified electricians.
- New installations will comply with the requirements of the General Application Regulations and the Electro-Technical Council of Ireland publication 'National Rules for Electrical Installations'.
- Flexible cables will be adequately protected against external mechanical and heat damage.
- Flexible cables should not be run across floors or walkways. Where electrical cables have to be run across open floor areas ramps will be placed over them to prevent the tripping and damage to cables.
- Adequate fusing or excess protection, e.g. circuit breakers, must be provided for all fixed and portable equipment.
- RCDs in workshops should be tested at the beginning of each term
- Areas around fuse boards will be kept clear of flammable materials and the fuse board cabinets will be kept closed at all times.
- Work on electrical appliances by contractors or work requiring isolation of electrical supplies requires an Electrical Work Permit. Buildings and Estates must be contacted.
- Staff must report defective equipment and take out of service
- Portable AC electrical appliances that may be subject to deterioration as a result of their use such as power supplies and oscilloscopes must be visually inspected and tested at regular intervals. The schedule of testing should be determined by following the Electrical Technical Councils guidelines available at www.etci.ie/docs/ET215(2008).pdf. A record of testing and inspection must be kept by the relevant departments.
- Live working is prohibited except in circumstances where it is not possible to carry out the work in any other manner. The following precautions must include as appropriate;
    - the use of people who are properly trained and competent to work safely on live equipment
    - the provision of adequate information to the person carrying out the work, about the live parts involved, the associated electrical installation and the likely risks,
    - the use of suitable tools including insulated tools, equipment and protective clothing For

example, insulating gloves, insulating boots and insulating rubber matting,
- the use of suitable insulated barriers or screens,
- the use of suitable instruments and test probes,
- accompaniment by a second person who is trained and able to act in an emergency, e.g. switch off power and give first aid treatment for electric shock,
- effective control of any area where there is danger from live parts.
- A safe system of work must be drawn up.

Checks & Inspections

- Portable appliance testing must be carried out on certain portable AC electrical equipment
- RCDs tested once per term
- Electrical circuits tested every 3 years

Information, Instruction & Training

- Trained First Aider/CPR (available when live working is carried out)
- Electrical Technician to wear Personal Alarm (when carrying out live work during lone working Periods)

Personal protective equipment required (last resort)

Safety boots

Initial Risk Rating (without any control measures)

Probability : **3** x Severity **3** = Risk Factor **9 High Risk**

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability : **2** x Severity **2** = Risk Factor **4 Medium risk**

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet General Health and Welfare Provisions	Ref: SWPS 015 Date: 2/02/2011 Assessed by: P. Killeen Approved by: E. Roe

The workplace regulations (general application) regulations 2007 S.I. No. 299 in particular regulation 18 and 19 gives specific standards to be maintained in the place of work.

These regulations refer to adequate facilities for "taking meals / consumption of food" "cleanliness," also that rest areas are "large enough". These facilities must be kept in a state that is free from accumulations of any dirt, dust etc..

Regulation 18 states:

(f) "the taking of meals by employees is prohibited at any location in the place of work where there is likely to be a risk to safety, health or welfare."

The Electrical Workshop would not be deemed suitable as a place for taking meals (which includes beverages) for a number of reasons including the space limitations, the location of items stored at height, the lack of hygiene facilities and the fact that it is deemed a work area for a member of staff.

Regulation 19 states:

An employer shall ensure that—
"(a) where, because of—
(i) the type of activity carried out, or
(ii) the presence of more than a certain number of employees, and
(iii) the safety, health and welfare of employees so requires,
employees are provided with an easily accessible rest room or appropriate rest area,"

providing relaxation during breaks,
(b) rest rooms are large enough and equipped with tables with easily cleaned surfaces and seats with backs, adequate for the number of employees,

The Electrical Workshop and Laboratories would not meet the criteria set out in section 19 above, because of the work activity carried out (where there is a presence of dirt and dust) and (it is deemed a work area) and (Insufficient space). Therefore under both sections of the Safety, Health and Welfare at Work (general application) regulations 2007 DkIT would be breaching the requirements.

Washing, food preparation and eating areas are made available at various locations: Starbucks, The Main Canteen, The Well, The Coffee Dock, The Staff Room.

Information, Instruction

To meet the requirements of Health and Safety Legislation and to ensure that good hygiene practices are employed at all times, it is prohibited to consume or bring into laboratories or workshops any drinks or beverages.

Signed: _____

Head of School of Engineering

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EMERGENCY RESPONSE	Ref: SWPS 016
	Date: 26/01/2011
	Assessed by: P. Killeen Approved by: E. Roe

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Emergency protocol for everyday working environment.

Emergency Contacts

- Dial 9 for an outside line, then 999 or 112 and you will be connected directly to the emergency services.
- Be prepared to give the following information:
- Information on the condition of the victim, if there is a casualty.
- Details of any hazards, i.e. fire/chemical/gas/structural collapse etc.
- Exact location of the accident (room number and building).
- Call the Estates Office (2671/2670) and give the above details.
- If deemed necessary, contact the Nurse (2777) and trained Department first aiders.
- Call Reception (500), ask them to alert the caretaker on duty and give them the above details.
- Report to the Head of Department, Head of School, and your Supervisor (where relevant).
- As soon as practically possible, report the accident on an accident/incident report form and submit to the Head of Department/ Head of School of Engineering

- Emergency contact numbers are strategically located throughout the School of Engineering

Fire Fighting Equipment

The majority of fire-fighting equipment points are located in workshops, laboratories and on each floor in the School of Engineering building. There are a number of trained fire wardens in the School. Fire warden courses are run on a regular basis and are available through the
Estates Office. The School abides by the Institute Policy and Procedures on fire safety.

Information, Instruction & Training

All training in First Aid, Emergency Response, and Fire Safety/Wardens is available through consultation with your Head of Dept and HR Office. The School abides by the Institute Policy on first aid safety.

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EMERGENCY CONTACT NUMBERS	Ref: SWPS 017
	Date: 26/01/2011
	Assessed by: P. Killeen Approved by: Eugene Roe

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Important contact details which are available throughout all Departments in case of emergency

General

- Ambulance/Fire Brigade: 112 or 999
- Health Centre/Campus Nurse: 2777
- Doctor: Dr. Shane Gleeson: 2702/ 042 9320038
- Hospital: Louth Hospital: (042) 933 4701

A List of First Aiders is prominently displayed in all workshops and Lab Locations

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Appendix IV

Accident / Incident, Near Miss and Dangerous Occurrence Reporting Procedures

ACCIDENT, INCIDENT, NEAR MISS AND DANGEROUS OCCURRENCE REPORTING PROCEDURES

Dundalk Institute of Technology is committed to reducing accidents and ill-health to staff and students of the Institute. Procedures are in place in the Institute to ensure that all Accidents, Near Misses and Dangerous Occurrences are recorded. These procedures not only ensure compliance with the law, but are also used as a basis for analysing trends throughout the Institute, in an effort to reduce accidents and ill-health to staff and students. All reports are reviewed at each meeting of the Institute Safety Monitoring Committee.

The purpose of an investigation is to establish all the facts relating to the incident, to draw conclusions from the facts and to make recommendations to prevent reoccurrence. Each incident will be looked at from the point of view of place, plant, procedures and people, to see where the safety system has failed and to tighten controls. It is important to note the definitions of all incidents (Accidents, Near Misses & Dangerous Occurrences) in order to take the correct action.

DEFINITIONS

An **Accident** is defined as an unplanned event resulting in personal injury or property damage. This could include, but is not limited to:

- Sprain
- Laceration
- Broken bone
- Concussion
- Unconsciousness
- Ill-health
- Sickness due to exposure to a dangerous substance, fumes or gases, fire or explosion
- Sickness due to a chemical spill or environmental pollution
- Damage to building
- Damage to property

A **Near Miss** is defined as an incident in which there was no injury or property damage but where the potential for serious consequences existed.

A **Dangerous Occurrence** is one of a number of specific, reportable adverse events, which are defined within the Twelfth Schedule of the General Application Regulations 2007. Dangerous Occurrences are reportable to the Health & Safety Authority (HSA) using Form lR3 or via the HSA online notification process. Any Dangerous Occurrences which are notifiable to the HSA will be forwarded by the Health & Safety Co-ordinator.

These are incidents with a high potential to cause death or serious injury, but which happen relatively infrequently. Dangerous occurrences usually include incidents involving:

- Lifting equipment
- Pressure systems
- Overhead electric lines
- Electrical incidents causing explosion or fire
- Explosions, biological agents
- Radiation generators and radiography
- Breathing apparatus
- Diving operations
- Collapse of scaffolding
- Train collisions
- Wells
- Pipelines or pipeline works

All Accidents are 'Incidents'. However, the definition of an Incident is wider in that it includes Dangerous Occurrences and Near Misses.

REPORTING PROCEDURES

All incidents must be reported immediately using the DkIT relevant incident report forms. These are located in the Parent Safety Statement and also on the DkIT website at https://www.dkit.ie/safety/incidents-accidents-reporting-procedures. All sections of the form must be completed with as much accurate information as possible.

The immediate supervisor must investigate the cause of the incident, and complete the Institute Accident/Incident Report Form or Near Miss Form. A copy of this form must then be made available to the Head of Department/School/Function for review and final sign off. Copies of the completed form should be forwarded to the Health & Safety Co-ordinator, Secretary/Financial Controller and the Estate's Office. Copies of these forms are contained within this document.

Accidents involving visitors and contractors must be investigated by the staff member to whom the injury was reported, in conjunction with the staff member they are visiting or working with.

Accidents, which involve serious or fatal injuries to an employee, student or any third party must be notified to the Health and Safety Co-ordinator and the HSA without delay.

Any accidents at work that involve an employee being unable to carry out his/her duties for three or more consecutive days, or that involve a third party being injured and requiring treatment from a medical practitioner, are reportable to the HSA and must be notified using Form lR1 or via the HSA online process, as soon as practicable. Dangerous Occurrences are reportable to the HSA using Form lR3 or via the HSA online notification process. Any incidents, which are notifiable to the HSA, will be forwarded to the HSA by the Health & Safety Co-ordinator.

Internal Reporting Procedure

It is the responsibility of each Head of Department/School/Function to ensure that the appropriate investigation procedures take place in the event of an Accident, Near Miss or Dangerous occurrence arising in their area. Heads of Department/School/Function must also ensure that the appropriate forms are completed and forwarded to **each** of the relevant parties (i.e. Estates Office, Secretary/Financial Controller, Health & Safety Co-ordinator).

It is the responsibility of the Health & Safety Co-ordinator to ensure that all reported incidents are tabled and discussed at each ISMC meeting.

External Reporting Procedure

Arising from the internal reporting procedure, any incidents, which are notifiable to the HSA, will be forwarded to that body by the Health & Safety Co-ordinator.

ACCIDENT / INCIDENT REPORT FORM

Note:
This form should be completed whenever an accident or incident occurs which results in injury or damage to personnel or property.
If personnel or property WERE NOT injured or damaged during the Accident/ Incident, do not use this form. Use the NEAR MISS REPORT FORM.

Accident / Incident Report Form			
i	**Name of person involved in Accident/Incident:**		
ii	**Address:**		
	Phone:		
iii	**Who was involved in the Accident/Incident:** ☐ **Student** ☐ **Employee** ☐ **Public** ☐ **Contractor** ☐**Visitor**		
iv	**Occupation:**		
v	**If an employee of the Institute please state Department:**		
vi	**If no, please elaborate:**		
vii	**Particulars of Accident/Incident & circumstances under which the Accident/Incident occurred:** *Use additional pages and/or photos if necessary.*		
viii	**Place:**		
ix	**Time:**	**Date:**	
x	**Witness Phone No & Address:**		
	Witness Phone No & Address:		
xi	**When and to whom was the Accident/Incident initially reported?**		

xii	**Details of injury/damage:** Indicate type of injury (put an 'x' in one box only) ☐ Bruising, contusion ☐ Concussion ☐ Internal injuries ☐ Open wound ☐ Abrasion, graze ☐ Amputation ☐ Open fracture (i.e. bone exposed) ☐ Closed fracture ☐ Dislocation ☐ Sprain, torn ligaments ☐ Suffocation, asphyxiation ☐ Gassing ☐ Drowning ☐ Poisoning ☐ Infection ☐ Burns, scalds and frostbite ☐ Effects of radiation ☐ Electrical injury ☐ Property damage, Specify_____ ☐ Other, Specify_____
xiii	**Indicate part of body most seriously injured (put an 'x' in one box only):** ☐ Head, except eyes ☐ Eyes ☐ Neck ☐ Back, spine ☐ Chest ☐ Abdomen ☐ Shoulder, upper arm, elbow ☐ Lower arm, wrist, hand ☐ Fingers, one or more ☐ Hip joint, thigh, knee cap ☐ Knee joint, lower leg, ankle ☐ Foot ☐ Toes, one or more ☐ Extensive parts of the body ☐ Multiple injuries ☐ Other, Specify_____
xiv	**Consequences of the Accident/Incident:** Fatal ☐ Non Fatal ☐ Date of resumption of work if back Year Month Day ____ _____ ___ Anticipated absence if not back 4-7 days ☐ 8-14 days ☐ More than 14 days ☐
xv	**Treatment:**
xvi	**Doctor's report and recommendation:**
xvii	**Steps taken to prevent reoccurrence of this type of Accident/Incident:**

	Signature of person completing report:	**Date:**
	Print Name & Job Title:	
	Signature of Head of Department/School/Function:	**Date:**
	Print name:	

(Copies of the completed Institute Accident Report are to be sent <u>separately</u> to the Institute Health & Safety Co-ordinator, the Secretary/Financial Controller and the Estates Office)

NEAR MISS REPORT FORM

Note:
This form should be completed whenever a Near Miss occurs - that is an incident WITHOUT injury to person or damage to property.
If personnel or property were injured or damaged during the incident, do no use this form. Use the 'ACCIDENT / INCIDENT REPORT FORM'.

NEAR MISS REPORT FORM			
i	**Date of Near Miss:**	**Time of Near Miss:**	
ii	**Location of Near Miss:**		
iii	**Who was involved in the Near Miss:** ☐ **Student** ☐ **Employee** ☐ **Public** ☐ **Contractor** ☐**Visitors**		
iv	**Name of person(s) involved in Near Miss:**		
v	**Name, Address & Contact details of any witnesses to Near Miss:**		
vi	**Description of Near Miss:**		
vii	**Steps taken to prevent a reoccurrence of this type of Near Miss incident:**		
	Signature of person completing report:		**Date:**
	Print Name & Job Title:		
	Signature of Head of Department/School/Function:		**Date:**
	Print name:		

(Copies of the completed Near Miss Report Form are to be sent to the Health & Safety Co-ordinator, the Secretary/Financial Controller and the Estates Office)

First Aid and Emergency Contacts

	Location	
Jim Connolly	Mechanical Engineering Workshop	Ext 2966
Phil Dillon	Engineering Administration	Ext 2754
Simon O' Neill	Plumbing Workshop	Ext. 2847
Larry Quigley	Plumbing Workshop	Ext. 2594
Nick O'Rourke	Plumbing Workshop	Ext. 2593
Alan Gorham	Plumbing Workshop	042 9396510

- Ambulance/Fire Brigade: 112 or 999
- Health Centre/Campus Nurse: 2777
- Doctor: Dr. Shane Gleeson: 2702/ 042 9320038
- Hospital: Louth Hospital: (042) 933 4701

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