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| Prifysgol **BANGOR** University EXAMPLE RISK ASSESSMENT  |  |

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| **Risk Assessment (RA) Title****Remember to complete Footer details** | GENERAL LABORATORY ENVIRONMENT |  | **Date RA Created and/or Reviewed** | Aug 2023 |  | **Version Number** | 2 |

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| **Summary of Activity RA Covers** |
| Covers general taught lectures and laboratory activities undertaken by Under Graduates whilst under the supervision of Academic and Technical staff and common types of laboratory equipment that is used as part of this. **NOTE:** Additional assessments may be required dependent on the activity and associated materials and equipment and as indicated on this Risk Assessment. A range of supporting information is available on the HSS Website: [Lab Safety – Safe Use of Equipment and Lab Hazards](https://www.bangor.ac.uk/hss/inflink/labsafety.php.en) and [Lab Safety – Chemicals and COSHH](https://www.bangor.ac.uk/hss/inflink/chemical-information.php.en) |

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| **Location(s) RA Covers** | Various | **Person(s) RA Covers** | Staff (including visiting academics), students working in laboratory  |
| **College / Service** | College  | **School / Section** | All relevant Schools in College |
| **RA Assessor(s)** | H&S Officer | **Contact Details** | 01248 38 9999 |

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| **Actions to be Reviewed By** | H&S Officer |  | **Next RA Review Date** | Before start of each Academic Term **or** Following significant changes to work activities and substances and equipment used |

**NOTE: Arrangements must be in place to communicate new and / or revised Risk Assessments to relevant persons.**

**Older versions must be removed from use (e.g. Folders, Website, My Bangor, Blackboard, Notice Boards) and filed for future reference/archive.**

| **Ref No** | **What are the Hazards?** | **Who/What is at Risk?** | **Existing Controls** | **Further Controls** | **Action By** | **ActionComplete** |
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|  | **Slips, Trips, Falls** – injuries if slip, trip, fall in lab due to poor housekeeping or floor maintained in an unsafe condition | Staff, students | * Lab Managers monitor floor condition and take action as required
* All persons entering lab should wear suitable footwear, ie non-slip, flat, enclosed
* Bags and coats stored under work benches
* Screens ceiling mounted to remove risk of trailing cables
* Bench mounted electrical sockets available to mitigate risk of trailing cables from portable electrical appliances
* Sufficient storage with items stored, where possible away when not in use
* Regular checks undertaken by Lab Manager to confirm items stored correctly
* The Lab Manager and Academic Supervisor will monitor during lectures to ensure items stored away from walkways, exits etc
* Spill Procedures and Spill Kit in place. Appropriate materials provided to clear spills
 | 1. Report spillages immediately and clear as per Emergency Spill Procedures
2. Guidance available on [HSS Website – Information Sheet 5 – Emergency Spill Procedure](https://www.bangor.ac.uk/hss/inflink/chemical-information.php.en)
 | Staff / Students | ongoing |
|  | **Electrical Hazards** – injuries, fire, equipment damage if electrical items not suitable for environment or maintained in sound condition | Staff, students | * Fixed electrical systems tested, inspected and maintained by competent contractor
* Every effort made to ensure portable electrical equipment is PAT Tested with label affixed to indicate this
* Trained Technical staff undertake PAT Testing using calibrated PAT Testers
* Portable electrical appliance database developed in College
 | 1. Routinely visually check electrical equipment to ensure PAT Tested. Arrange if required
2. Confirm electrical equipment on database
3. Ensure new / redundant items added / removed from database
4. Ensure User Checks carried out - [HSS Website – Information Sheet 2 – Electrical](https://www.bangor.ac.uk/hss/inflink/chemical-information.php.en) Safety
5. Report defects to Technical Staff immediately for action
 | Lab Manager“““Staff / Students | ongoing |
|  | **Personal Contamination / Exposure to Hazardous Substances (Chemical & Biological** – injuries, ill health if substances not handled correctly  | Staff, students | * COSHH Assessments undertaken as required by the activity / substance to be used
* Good laboratory practices implemented
* Persons working in lab briefed in Laboratory Rules and Risk Assessment (also displayed)
* A large sign is displayed regarding not eating, drinking etc in lab
* Lab coats and suitable footwear should be worn at all times in lab
* Additional PPE eg gloves worn as directed with gloves in a range of sizes freely available
* Laboratory benches cleaned regularly
* Hand wash sinks, soap and paper towels available
 | 1. Ensure specific COSHH Assessments are undertaken for the use of all hazardous agents
2. Ensure persons working in lab briefed in Laboratory Rules, Risk Assessment and additional COSHH Assessments as necessary
3. Routinely monitor that persons in lab are wearing PPE, suitable footwear etc
4. Ensure safe storage of all hazardous substances
5. Display Hand Wash Sink signs
 | Lab Manager / Ac. Sup.“Lab Manager““ | ongoing |
|  | **Sharps including Dissection Kits eg needles, scalpels, broken glass** – cuts, puncture wounds from ‘needlestick / sharps’ injuries  | Staff, students | * Persons instructed to take care when using scalpels, syringes, glass ware, dissection kits
* Plastic cover slips used where possible
* Most scalpel injuries occur when changing blades. Students given specific instruction on this and / or staff change blades
* Sharps containers available for safe disposal
* Designated ‘broken glass’ bins available
* Persons instructed to report breakages
 | 1. Sharps containers to be closed when full and disposed of promptly via Specialist Waste Contractor
2. Broken glass to be disposed of in designated bin
3. Remind persons to report all sharps injuries
 | Lab ManagerAll persons“ | ongoing |
|  | **Manual Handling** – injuries / ill health from incorrect handling | Staff, students | * Team lifting for heavy items and / or arranged through Facilities Team
* Regularly used equipment, heavy items and breakables stored at low level
 | 1. Arrange manual handling training for staff if felt necessary
2. Remind staff to report health concerns which could affect their ability to lift etc
 | H&S Officer“ | ongoing |
|  | **Storage** –poor housekeeping creating trip hazards, risk of falling objects, potential fire risk | Staff, students | * Materials and equipment should be stored appropriate ie heavy items and glassware below shoulder height
* Steps / step up stool provided where necessary
 | 1. Monitor storage / housekeeping and take action as required
2. Establish, 6 monthly visual inspection of steps / step up stools with labels affixed to indicate complete
 | Lab Manager“ | ongoing |
|  | **Emergency Procedures eg Fire, First Aid** – injuries worsening / incident escalating if delay in responding  | Staff, students | * All personnel receive a H&S Induction before working in Laboratory which includes emergency arrangements
* First Aid Posters displayed which detail first aid arrangements
 | 1. Ensure records of H&S Inductions kept
2. Periodically check arrangements (eg First Aid Box & Posters, Fire Action Notices) to ensure contents / details up to date
3. Ensure staff and students aware of 333 emergency number for Security Section
 | Lab Manager““ | ongoing |
|  | **Spills of Hazardous Substances** – injuries, ill health from contact with spilled materials  | Staff, students | ***See Emergency Procedures above**** Emergency Spill Procedures displayed and equipment eg Spill Kits provided
* Emergency Spill Procedures should be considered as part of COSHH Assessments and appropriate to substances being handled
* Bins available to store materials used to clean spills until correct disposal
* Emergency Showers available where needed which are checked as per legionella requirements by a competent contractor
 | ***See Emergency Procedures above*** |  |  |
|  | **Fire** – injuries or property damage if a fire occurred as a result of substances and equipment being used incorrectly | Staff, students, Emergency Services | ***See Emergency Procedures & Electrical Hazards*** * Building fitted with fire detection and notification system which is tested, inspected and maintained by a competent contractor
* Fire Action Notices displayed
* Fire extinguishers available which are maintained by a competent contractor
* Technicians carry out Fire Drills and fire alarm checks as required with records kept of this
* Personal Emergency Evacuation Plans arranged for those with accessibility issues
* Emergency Services informed of potential fire hazards within the building
* Fire risks should be considered as part of COSHH Assessments and appropriate to substances being handled
 | ***See Emergency Procedures & Electrical Hazards***1. Ensure specific Risk / COSHH Assessment in place for all processes which could introduce a heightened fire risk
 | Ac. Sup. | ongoing |
|  | **Emergencies** – fire, first aid, delay in responding to an accident / incident due to unfamiliarity with procedures | Staff, students | ***See Accessibility above**** Building fitted with fire detection and notification system
* Fire Action Notices displayed detailing evacuation procedure and Assembly Point
* First Aid signs displayed detailing First Aid arrangements
* Refuge Points fitted in buildings with lifts for persons unable to evacuate via the stairs
* New persons should receive an Induction which includes emergency arrangements
 | ***See Accessibility above***1. Periodically check first aid arrangements (First Aid Box, Posters) to ensure contents / details up to date
2. Perform regular recorded, fire alarm operation checks (or contact Security)
3. Arrange twice yearly fire drills (one announced, one unannounced) with details recorded
4. Inform persons with accessibility issues about Refuge Points
 | Lab ManagerTechnician“Lab Manager | ongoing |

The following are common items of laboratory equipment. More detailed guidance and Information Sheets are available on the [HSS Website](https://www.bangor.ac.uk/hss/inflink/labsafety.php.en).

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|  | **Autoclaves** – burns, manual handling, chemical and biological hazards, fire | Staff, students | * Use restricted to authorized trained personnel
* Autoclave operated in accordance with [Information Sheet LS4 – Safe Use of Autoclaves](https://www.bangor.ac.uk/hss/inflink/labsafety.php.en) eg efficacy checks, User Log Book, appropriate gloves to handle hot items
* Reference to specific COSHH Assessments as required
* Annual maintenance by competent contractor
* Item regularly inspected for electrical safety
 | 1. Ensure training records maintained
2. Confirm item on Insurance Schedule to ensure vessel examined as per Pressure Systems Safety Regulations
3. All defects to be reported immediately to Laboratory Manager
 | Lab Manager“Staff / Students | ongoing |
|  | **Microwave Oven** – burns, chemical and biological hazards, fire | Staff, students | * Microwave operated in accordance with [Information Sheet LS3– Safe Use of Microwaves](https://www.bangor.ac.uk/hss/inflink/labsafety.php.en) eg appropriate gloves available to handle hot items
* Reference to specific COSHH Assessments as required
* Item regularly inspected for electrical safety
 | 1. All defects to be reported immediately to Laboratory Manager
 | Staff / Students | ongoing |
|  | **Fumehoods** – potential exposure to hazardous vapours, gases and particulates, fire | Staff, students | * Fumehood operated in accordance with [Information Sheet LS6 – Safe Use of Fumehoods](https://www.bangor.ac.uk/hss/inflink/labsafety.php.en)
* Reference to specific COSHH Assessments as required
* Annual maintenance by competent contractor
 | 1. Periodically check sash alarm operation
2. All defects to be reported immediately to Laboratory Manager
 | TechnicianStaff / Students | ongoing |
|  | **Micro and Mini Centrifuges** – mechanical injuries, chemical and biological hazards | Staff, students | * Operated in accordance with [Information Sheet LS5 – Safe Use of Micro Centrifuges](https://www.bangor.ac.uk/hss/inflink/labsafety.php.en)
* Reference to specific COSHH Assessments as required
* Item regularly inspected for electrical safety
 | 1. Periodically check interlock works – record
2. All defects to be reported immediately to Laboratory Manager
 | TechnicianStaff / Students | ongoing |
|  | **Microscopes** – frequent use can lead to eye strain, headache, upper limb disorders. Risk of exposure to hazardous substances. Sharp risk if slip breaks | Staff, students | * Users trained in correct set up and use of microscopes including need to take regular breaks
* Plastic slips used where possible
* Height adjustable chairs supplied
* Reference to specific COSHH Assessments as required
* Item regularly inspected for electrical safety
 | 1. If liquid spilt on microscope isolate power before cleaning
2. All defects to be reported immediately to Laboratory Manager
 | Staff / Students“ | ongoing |
|  | **PCR Machine** -exposure to hazardous substances, burns | Staff, students | * User instruction provided
* Reference to specific COSHH Assessments as required
* Warning notices displayed about hot components
* Item regularly inspected for electrical safety
 | 1. All defects to be reported immediately to Laboratory Manager
 | Staff / Students | ongoing |
|  | **Heating Blocks / Hot Plates** – burns, contact with sharps if containers break, fire if incorrect container used or substances heated incorrectly, exposure to hazardous materials | Staff, students | * User instruction provided
* Reference to specific COSHH Assessments as required
* Warning notices displayed
* Heat resistant gloves available for use
* Suitable heat and chemical resistant containers provided
* Materials should not be left unattended on hotplate / heating block
* Item regularly inspected for electrical safety
 | 1. If liquid spilt isolate power and allow to cool before cleaning
2. All defects to be reported immediately to Laboratory Manager
3. Ensure item switched off after use
 | Staff / Students““ | ongoing |
|  | **Balances / PH Meters** – exposure to hazardous substances | Staff, students | * Reference to specific COSHH Assessments as required
* Balances cleaned after use
* Item regularly inspected for electrical safety
 | 1. If spill occurs isolate power before cleaning
2. All defects to be reported immediately to Laboratory Manager
 | Staff / Students“ | ongoing |
|  | **UV Illuminator** – burns to skin, eyes from UV light, exposure to ethidium bromide | Staff, students | * User instruction provided – see [Information Sheet – Safe Use of UV Equipment](https://www.bangor.ac.uk/hss/inflink/artificalopticalradiation.php.en)
* Reference to specific ethidium bromide COSHH Assessments
* UV light interlocked with operation of door
* Nitrile gloves worn when handling gels containing ethidium bromide
* Item regularly inspected for electrical safety
 | 1. Periodically check interlock works – record
2. All defects to be reported immediately to Laboratory Manager
 | Staff / Students“ | ongoing |
|  | **Electrophoresis Equipment and Power Supply** – electric shock, exposure to hazardous chemicals, particularly ethidium bromide when handling agarose gel | Staff, students | * User instruction provided
* Reference to specific COSHH Assessments
* Nitrile gloves worn when handling agarose gel and electrophoresis equipment
* Gel tanks regularly checked for cracks, leaks, exposed wires
* Gel tank lids firmly closed before switching on electrical supply
* Item regularly inspected for electrical safety
 | 1. If spill occurs isolate power and inform Lab Manager
2. All defects to be reported immediately to Laboratory Manager
 | Staff / Students“ | ongoing |
|  | **Water Bath** – electrical hazards, contact with hot surfaces, legionella risk | Staff, students | * Heat resistant gloves and tongs available
* User instruction provided
* Guidance in [Legionella Guide for Colleges and Departments](https://www.bangor.ac.uk/hss/inflink/legion.php.en) followed
 | 1. Each month run water bath for one hour at 60OC. Record to confirm undertaken
2. All defects to be reported immediately to Laboratory Manager
 | Lab ManagerStaff / Students | ongoing |
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