GENERAL HEALTH AND SAFETY RISK ASSESSMENT FORM

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| --- | --- | --- | --- | --- | --- |
| Site | **Collaborative Teaching Laboratory (CTL) Teaching Labs**  | **Department** | **EPS** | **Version / Ref No.** | **11.3** |
| **Activity Location** | **CTL , Bioscience and Mechanical Engineering Building** | **Activity Description** | **Teaching activity in Collaborative Teaching Laboratory (CTL) Teaching Labs****All lab will return to full capacity,** **Maximum CTL staffing 33 and Teaching Academic staff plus demonstrators 20. (Typical but may vary by the CTL lab and the lab activity).** |
| **Assessor** | **Mala Patel** | **Assessment Date** | **26/08/2021** | **Date of Assessment Review** | **20/12/2021** |
| **Academic / Manager Name** | **Dr Adrian Wright / Mala Patel** | **Academic / Manager Signature** |  |

| Hazard Assessment | Control Assessment | Actions |
| --- | --- | --- |
| Hazard Category | Hazards Identified | Who might be harmed?StaffStudentsContractors Others | How might people be harmed? | Existing Control Measures | Initial Risk Rating | Are these adequate?Yes/No | Changes to/ Additional Controls | Residual Risk Rating | Owner | Due Date | Action Complete |
| S | L | R | S | L | R |
| Organisational | Psychological wellbeing | Staff Students and Visitors | Anxiety and stress caused by concerns around returning to work and studies on Campus | Regular communications through a variety of platforms. * For CTL staff this includes 121 discussions with their line manager.
* For students this includes the communication from the schools and the CTL intranet site.
* For school’s Lecturers and demonstrators staff includes the communication from the schools and the CTL intranet site

Advertising of mitigations made by room posters, electronic display monitors and extra details posted on the rooms information website: [www.lratbookings.bham.ac.uk](http://www.lratbookings.bham.ac.uk) | 2 | 2 | 4 | Yes |  |  |  |  |  |  |  |
| Biological | Virus transmission | Staff Students and Visitors | Exposure to respiratory droplets carrying COVID-19 from an infectious individual transmitted via sneezing, coughing or speaking | Anyone suffering from with any form of illness should not attend campus until the illness has been verified as not being Covid-19.Regular access to the Lateral Flow Device tests and kits are available to staff and students who are coming onto campus. Staff and students are strongly encouraged to test twice a week and to record their results on the Government’s reporting website site: <https://www.gov.uk/report-covid19-result> and to report any positive test results to the University using the [COVID-19 reporting form](https://intranet.birmingham.ac.uk/staff/coronavirus/test-and-trace.aspx). All building users who is aware that they have the Covid-19 virus are required by the University to notify either their line manager (staff) or personal tutor (students) . Room users will be made aware of this through University guidance including electronic display monitors and posters in teaching rooms. In lab sessions Lecturers and demonstrators will be encouraged to draw attention to this information before the lab session begins. A “CTL lab Checklist” to aid with identification of infection control measure had been produced and is available at every lectern or Audio-visual unit within the teaching lab.Attendance by building users visitors, staff and students at sessions can be retrospectively determined via the teaching timetable in the event of any subsequent positive test to help contain clusters and outbreaks and assist any request for data by the NHS Test and Trace service.A Test and Trace QR code is displayed outside the each lab for all lab users to scan using the NHS Covid-19 app.All room users will be encouraged to continue to scan QR codes. This will be included in guidance posters. | 3 | 1 | 3 | Yes |  |  |  |  |  |  |  |
| Environmental | Virus transmission in the workplace due to lack of social distancing  | Staff Students and Visitors | Exposure to respiratory droplets carrying COVID-19 from an infectious individual transmitted via sneezing, coughing or speaking. | Lecturers and demonstrators remind students of room capacity constraint, allocated workplace and encourage full use of all available space in support of reducing unnecessary contact. Workplace/study and timetabling routines changed to ensure room/building capacity calculated to maintain reduce the direct contact and minimise the risk of infection including: * Change to peak staff and student entry and exit times, core working/study hours and arrival and departure times into the building have been staggered to reduce crowding into and out of the building. This includes local arrangements by Colleges and Schools including reducing lecture and teaching sessions to allow groups to leave early to stagger the times particularly in areas and buildings that have a large number of teaching/seminar rooms and lecture theatres.
* Adjusted booking processes in use to reduce the number of people in the building at the same time to avoid overcrowding. This includes local arrangements by Colleges and Schools to reduce student numbers in teaching/seminar rooms and lecture theatres regardless as to the maximum capacities set for the room to reduce the number of people particularly in areas and buildings that have a large number of teaching/seminar rooms and lecture theatres.
* Individuals (including staff, students visitors and contractors), unless exempt will be encouraged and supported to wear face coverings in line with University communications. Information will be provided in University and local guidance, local induction and general signage.
* Exceptions would apply when wearing a face covering would impact on teaching and learning activities, the ability to practical activities including participating in lab. Labs PPE requirements will be communicated via the school and the student lab script or manual.
* Where face covering are not recommended for the lab activity, then clear visor/shield will be provided that covers the face and provides a barrier between the wearer and others from respiratory droplets, can be provided for staff to wear where wearing a face covering impacts on their teaching and learning activities and good ventilation can be maintained. Re-usable visors are cleaned and sanitised before and after use by the user.
* Individuals have been reminded via this link (https://www.gov.uk/government/publications/face-coverings-when-to-wear-one-and-how-to-make-your-own/face-coverings-when-to-wear-one-and-how-to-make-your-own of how to use face coverings.
* Wherever one way systems assist the flow of people and avoid crowding or congestion they should be maintained, with appropriate signage and other visual aids in place
* Room users are told they should be prepared to remove face coverings if asked to do so by police officers and staff for reasons of identification

Schools’ lecturers and demonstrators are to ensure all students / staff attending the lab sessions enter and leave the teaching area as per posters displayed to minimise congestion in line with the building risk assessment in which the lab is located.Due to the potential increased risk of transmission from aerosol transmission steps have been taken to avoid people needing to unduly raise their voices to each other including where available using remote connection, virtual platforms, microphones, headphones and multimedia set up during lab sessions and lecturers, demonstrators and tutors keeping the noise level within the room to a level where the volume of normal conversation can be maintained.When delivering a session, lecturers and demonstrators are normally aware of student behaviour as part of general classroom management. If compliance with control measures within a teaching space is problematic, concerns should be reported back to the school’s CTL lead and Lab manager or the CTL Operations team.All activities should be segregated to reduce unnecessary contact including: * Work stations moved or individuals relocated

Provision of additional screens where needed to segregate people. Desks are arranged with individuals facing in opposite directions.* Schools will be encouraged to allocate students to groups designated to lab workstations to reduce contact with other groups.
* Students will be encouraged to minimise movement around the lab and use remote connection or virtual platform to gain the attention of Schools’ lecturers and demonstrators
* If required, areas of marked out with floor tape to ensure adequate distancing is in place. Visual management aids in place to remind lab users.
* Teaching Area has been arranged and area marked out with floor tape at the front of the room to ensure there is distancing between the tutor/lecturer and the students to minimise contact between students, lecturers and demonstrators
* Teaching spaces have all room users seated in the same direction facing the front. Some lab areas designed for group working have special group equipment workstations. In such areas students may face each other. As large a distance between equipment workstations groups as possible should be maintained as outlined in current workplace/DfE guidance. Groups should be kept as small and consistent as possible. Moving from one group table to another should be avoided in order to minimise numbers of contacts.
* Academics/Lecturers perform frequent evaluation against distancing controls via observations of behaviour to the control and report any concerns back to the School/College.

Other mitigations include:* Further increasing the frequency of hand washing and provision of hand sanitiser and surface cleaning.
* Review and re-organising of the pedestrian flows both inside and outside of the teaching space and additional measures including access and egress flow plans established and information provided to staff and students. Directional flow and congestion signs are displayed.
* Using screens or barriers to separate people from each other.
* Using back-to-back or side-to-side working (rather than face-to-face) whenever possible.
* Reducing the number of people each person has contact with by using ‘fixed teams or partnering’ (so each person works with only a few others).
* Re-engineering the technical activity to avoid congestion
* Improving ventilation by re-organising the indoor space to optimise the ventilation available.
* PPE consisting of face masks and a clear visor/shields that covers the face, and provides a barrier between the wearer and others, provided for staff working in close proximity to people and in particular a person’s face, mouth and nose, for an extended period of time (the majority of the working day). Re-usable visors are cleaned and sanitised regularly using normal cleaning products.
* New students (first year and taught MSc) provided with personal lab coats and safety specs at the start of the first academic year and they are responsible for cleaning and location.
* Lecturers and demonstrators will be assigned personal lab coats which will be laundered in the workplace after every use.

Individuals have been reminded via this link (*https://www.gov.uk/government/publications/face-coverings-when-to-wear-one-and-how-to-make-your-own/face-coverings-when-to-wear-one-and-how-to-make-your-own)* of how to use face coverings safely. | 3 | 1 | 3 | Yes |  |  |  |  |  |  |  |
| Environmental | Virus transmission in the workplace due to lack of social distancing  | Staff Students and Visitors | Exposure to respiratory droplets carrying COVID-19 from an infectious individual transmitted via sneezing, coughing or speaking. | Teaching labs cleaned daily by cleaning services.Guidance given on hand-washing and distancing at the start of all lecture and posters displayed in teaching/lecturing spacesPosters also advocate frequent hand sanitisation and following the “Catch it Bin It Kill It” displayed in all teaching labs.Soap and water and hand sanitiser are provided in the building and are placed at the entrance and in teaching areas where they will be seen.All Lecturers and demonstrators issued with Lab Guidelines for Lecturers and demonstrators with instructions for equipment use and cleaning.Lecturers will clean all touchpoints on equipment that they intend to use: including mice, keyboards, whiteboards, AV control system and visualizers before and after use with disposable wipes provided. A tub of wipes will be provided in each area.Students asked to clean the workstations surfaces and chair or seat that they have been sitting at before and after use.Students will be informed in the CTL induction and reminded by Lecturers and demonstrators and signage to clean the writing surface and chair or seat that they have been sitting at with wipes.Objects and surfaces that are touched regularly including study surfaces are cleaned using the antibacterial/alcohol wipes provided, by the user before they leave the teaching session. Multi-user items such as whiteboard pens and erasers will be removed from all rooms and labs. Lab users will have to bring their own pens and erasers covered in the School student communications. | 3 | 2 | 6 | Yes |   |  |  |  |  |  |  |
| Biological | Suspected Case of CIOVID-19 | Staff Students and Visitors | Exposure to respiratory droplets carrying COVID-19 from an infectious individual transmitted via sneezing, coughing or speaking. | Response plan in place in the event a confirmed or suspected case of COVID-19 and communicated and includes:* If a person becomes unwell in the teaching lab with suspected COVID-19, they will be sent home in accordance to the University guidance. Lecturers/Tutors will follow the NHS Test and Trace workplace guidance: <https://www.gov.uk/guidance/nhs-test-and-trace-workplace-guidance>
* The area will be cleaned in accordance with the specific Government [guidance](https://www.gov.uk/government/publications/covid-19-decontamination-in-non-healthcare-settings/covid-19-decontamination-in-non-healthcare-settings).
* Provision and monitoring of adequate supplies of
* cleaning materials are in place.
* Staff must tell their line manager if they develop symptoms. Absence will be managed in accordance to the University guidance provided.
* Students with suspected symptoms should follow the latest University advice at:
	+ [Test, Trace and Protect Process](https://intranet.birmingham.ac.uk/staff/coronavirus/test-and-trace.aspx)
* Students support is accessible via the link below:
	+ <https://intranet.birmingham.ac.uk/student/2020/Your-safety-and-wellbeing.aspx>
* Employees and students to also follow the Government advice: <https://www.gov.uk/coronavirus>
* If an individual tests positive for COVID-19 this will be managed in accordance with the University’s [Test, Trace and Protect Process](https://intranet.birmingham.ac.uk/staff/coronavirus/test-and-trace.aspx).
* If multiple cases of coronavirus appear in a workplace, an outbreak control team from either the local authority or Public Health England will, if necessary, be assigned to help the University manage the outbreak. The University will seek advice from the local authority in the first instance.
* Individuals will be told to isolate because they:
	+ have coronavirus symptoms and are awaiting a test result
	+ have tested positive for coronavirus
	+ meet the criteria included in the [Government Stay at Home Guidance](https://www.gov.uk/government/publications/covid-19-stay-at-home-guidance/stay-at-home-guidance-for-households-with-possible-coronavirus-covid-19-infection)
 | 3 | 2 | 6 | Yes |  |  |  |  |  |  |  |
| Environmental | Ventilation | Staff Students and Visitors | Exposure to airborne droplets carrying the virus | Ventilation systems are maintained in line with planned and preventative maintenance schedules, including filter changes.An assessment of the ventilation in the room has been undertaken which included checks such as:* Is the space naturally or mechanically ventilated
* All areas within the building which are usually occupied and have poor ventilation have been identified and the use of the area re-assessed (see below).
* An assessment of Fresh air (ventilation) has been undertaken for the workplace and where necessary individual workspaces. This included how fresh air is provided (natural, mechanical or combination of both), how many people occupy/use the area, how much time people spend in the areas, how large the area is, what activities take place in the areas, the equipment and machinery in the workspaces, the use of fans and Local Exhaust Ventilation.

Recirculation of unfiltered air within the workplace has been avoided or reduced as far as possible. While this will continue to be minimised some area will need to have some recirculation, to improve thermal comfort. Natural ventilation can be improved by fully or partially opening windows, air vents and doors, not signed as fire doors. This should be balanced against the need to maintain comfortable temperatures for all users of the space. The University will be centrally monitoring carbondioxide (CO2) as a proxy for air quality and ventilationin large teaching spaces. Information can be providedon these spaces.Additional control can be provided via the use ofportable CO2 sensors where there are any concernsraised about the adequacy of ventilation in a givenspace. To raise a concern please contact the BuildingManager and / or the Estates HelpdeskRooms can be purged (aired) when not in use by leaving the windows and doors fully open. However, it is important to plan and close windows to minimise the risk of rodent and pigeon issues.Mechanical ventilation has typically been set at maximum fresh air settings and operate at extended periods.These mitigations apply:* Opening windows and doors partially can still provide acceptable ventilation while keeping the workplace comfortable. Opening higher-level windows will probably create fewer draughts.
* If the lab is cold students should not expect shirt-sleeve conditions but should wear extra layers and warmer clothing in addition to the PPE requirement for the lab activity
* Use natural ventilation alongside heating systems to maintain a reasonable temperature in the workplace.

Ventilation Instruction signs displayed in each room asking room users to “Please ensure you open all windows on arrival and close on departure.”Most mechanical ventilation systems are monitored by building management systems that will raise a fault alarm; but please ensure that any potential fault with mechanical or natural ventilation is raised with the Building Management and or the Estates Helpdesk. General considerations reflected on during reopening of the buildings in relation to the ventilation and fresh air to occupied spaces. Core strategy based on [CIBSE Covid-19 Ventilation Guidance](https://www.cibse.org/coronavirus-covid-19/emerging-from-lockdown), [HSE guidance](https://www.gov.uk/government/publications/higher-education-reopening-buildings-and-campuses/higher-education-covid-19-operational-guidance), [Government](https://www.gov.uk/government/publications/higher-education-reopening-buildings-and-campuses/higher-education-covid-19-operational-guidance) and other relevant industry guidance. The guidance is constantly under review by the University’s Estates, as SARS-CoV2 transmission routes become more clearly defined, and any updated recommendations assessed and implemented where relevant to University systems. Links used above:HSE - Ventilation and air conditioning during the coronavirus (COVID-19) pandemic 21st July 2021<https://www.hse.gov.uk/coronavirus/equipment-and-machinery/air-conditioning-and-ventilation/index.htm> CIBSE - COVID-19: Ventilation version 5 - Updated 16th July 2021<https://www.cibse.org/coronavirus-covid-19/emerging-from-lockdown> DfE - Higher education COVID-19 operational guidance - Updated 19 July 2021<https://www.gov.uk/government/publications/higher-education-reopening-buildings-and-campuses/higher-education-covid-19-operational-guidance> HSE - Keeping workplaces safe as coronavirus (COVID-19) restrictions are removed - Updated 19 July 2021 <https://www.hse.gov.uk/coronavirus/roadmap-further-guidance.htm> Ventilation systems are maintained in line with planned and preventative maintenance schedules, including filter changes. Individual teaching rooms vary in size, age, configuration etc. The range of specific mitigations in place in each will vary accordingly.  | 3 | 2 | 6 | Yes |  |  |  |  |  |  |  |
| Mechanical | Machinery & Equipment | Staff Students and Visitors | Exposure to respiratory droplets carrying and contact with an object that has been contaminated with COVID-19. | Equipment and all touch points or surfaces that are touched regularly will be frequently cleaned and disinfected before and after use by the user.Specialist Lab Equipment will be frequently cleaned and disinfected before and after use, according to SOPs anti-viral wipes /70% Ethanol /diluted Virkon/ disinfectant with disposable cloths can be used. These will be discarded in the autoclave waste bin having ensured sufficient time for the alcohol to evaporate.Individual equipment such as balances and pipettes will be provided. These will be sanitised by the Lab team every changeover of student groups.The user/student is expected to sanitise equipment before and after use.Signage reminding lab users to wipe down equipment before and after use to be usedSterilising chemicals and cloths are provided in the area to clean machines and equipment prior to the commencement of work and upon completion. If machines and equipment are shared, sterilising will be carried out between operations by the user.Lab staff will use, anti-viral wipes /70% Ethanol /diluted Virkon/ disinfectant with disposable cloths provided, to clean machines (such as printers) and equipment prior to use and upon completion. Laptops will be utilised and staff will be instructed to bring in their laptops daily.Staff will assess the compatibility of the Sterilising chemicals and cloths provided to clean machines (such as printers) and equipment prior to use and upon completion. The school lecturers and demonstrators will monitor compliance during the taught lab session. The school will monitor compliance and will implement the Escalation Process, if compliance of the risk assessment control measures are breached.The CTL Lab and Operations teams will monitor compliance and they will implement the Escalation Process via performance management process, if compliance recommended by the risk assessment’s control measures are breached. | 3 | 2 | 6 | Yes |  |  |  |  |  |  |  |

**Risk Assessment Guidance**

Risk Scoring System

The scoring system is provided as a tool to help structure thinking about assessments and to provide a framework for identifying which are the most serious risks and why.

|  | **Consequence / Severity score (severity levels) and examples of descriptors**  |
| --- | --- |
|  | **1**  | **2**  | **3**  | **4**  | **5**  |
| **Domains**  | **Negligible**  | **Minor**  | **Moderate**  | **Major**  | **Catastrophic**  |
| **Impact on the safety of staff, students or public (physical / psychological harm)**  | Minimal injury not requiring first aid or requiring no/minimal intervention or treatment. No time off work | Minor injury or illness, first aid treatment needed or requiring minor intervention.Requiring time off work for <3 days  | Moderate injury requiring professional intervention Requiring time off work for 4-14 days RIDDOR / MHRA / agency reportable incident  | Major injury leading to long-term incapacity/ disability (loss of limb)Requiring time off work for >14 days  | Incident leading to death Multiple permanent injuries or irreversible health effects |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Likelihood score**  | **1**  | **2**  | **3**  | **4**  | **5**  |
| **Frequency** | **Rare**  | **Unlikely**  | **Possible**  | **Likely**  | **Almost certain**  |
| **Broad descriptor**  | This will probably never happen/occur | Do not expect it to happen/occur but it is possible it may do so | Might happen or occur occasionally | Will probably happen/occur but it is not a persisting issue | Will undoubtedly happen/occur, possibly frequently |
| **Time-framed descriptor** | Not expected to occurfor years | Expected to occurat least annually | Expected to occur atleast monthly | Expected to occur at least weekly | Expected to occur at least daily |
| **Probability** Will it happen or not? | <0.1 per cent | 0.1–1 per cent | 1.1–10 per cent | 11–50 per cent | >50 per cent |

The overall ***level of risk*** is then calculated by multiplying the two scores together.

**Risk Level = Consequence / Severity x Likelihood (C x L)**

|  |  |
| --- | --- |
|  | **Likelihood**  |
| **Likelihood score**  | **1**  | **2**  | **3**  | **4**  | **5**  |
|  | **Rare**  | **Unlikely**  | **Possible**  | **Likely**  | **Almost certain**  |
| **5 Catastrophic**  | 5  | 10  | 15  | 20  | 25  |
| **4 Major**  | 4  | 8  | 12  | 16  | 20  |
| **3 Moderate**  | 3  | 6  | 9  | 12  | 15  |
| **2 Minor**  | 2  | 4  | 6  | 8  | 10  |
| **1 Negligible**  | 1  | 2  | 3  | 4  | 5  |

The Initial Risk Rating is the level of risk before control measures have been applied or with current control measures in place.

The Residual Risk is the level of risk after further control measures are put in place.