xRisk Assessment Template

Risk Matrix and Rating Guidance:

The assessor shall assign values for the hazard severity **(a)** and likelihood of occurrence **(b)** (taking into account the frequency and duration of exposure) on a scale of 1 to 5, then multiply them together to give the rating band:

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| Hazard Severity (a) | Likelihood of Occurrence (b) |
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| 1 – Trivial (e.g. discomfort, slight bruising, self-help recovery) **2 – Minor** (e.g. small cut, abrasion, basic first aid need)  **3 – Moderate** (e.g. strain, sprain, incapacitation > 3 days)  **4 – Serious** (e.g. fracture, hospitalisation >24 hrs, incapacitation >4 weeks)  **5 – Fatal** (single or multiple) | **1 – Remote** (almost never)  **2 – Unlikely** (occurs rarely)  **3 – Possible** (could occur, but uncommon)  **4 – Likely** (recurrent but not frequent)  **5 – Very likely** (occurs frequently) |

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| **Risk Assessment Matrix** | | | | | |  | **Risk Rating Bands (A x B)** | | |
| **(B)🡳 (A)🡲** | **Trivial** | **Minor** | **Moderate** | **Serious** | **Fatal** |  | **LOW RISK**  **(1 – 8)** | **MEDIUM RISK**  **(9 - 12)** | **HIGH RISK**  **(15 - 25)** |
| **Remote** | **1** | **2** | **3** | **4** | **5** |  |  |  |  |
| **Unlikely** | **2** | **4** | **6** | **8** | **10** |  | Continue,  but review periodically to ensure controls remain effective | Continue,  but implement additional reasonably practicable controls where possible and monitor regularly | **STOP THE ACTIVITY**  Identify new controls. Activity must not proceed until risks are reduced to a low or medium level |
| **Possible** | **3** | **6** | **9** | **12** | **15** |  |
| **Likely** | **4** | **8** | **12** | **16** | **20** |  |
| **Very likely** | **5** | **10** | **15** | **20** | **25** |  |

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| Risk Assessment Record | | |
| Risk Assessment Title: 3d Printing Machine | Date Produced: March 2017 | Review Date: 24th January, 2022 |
| Overview/Description of Activity: 3d Printing | Duration/Frequency of Activity: Daily | |
| Location of Activity: Student Workshops | Generic or Specific Assessment: Generic Risk Assessment | |

| # | Hazard(s) identified | Who might be affected and how | Existing controls & measures | Severity (a) | Likelihood (b) | Risk Rating  (a x b) | Additional control/action required |
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| 1 | Use of 3d Printing Machine | Staff/Students | * Only trained personnel will have the authority to use the 3d printing machines. | 4 | 1 | 4 | * Training provided for Students, Trained Staff only to use 3d Printing Machines. |
| 2 | Entanglement in moving parts (drawing in) | Staff/Students | * Loose hair to be tied back, no loose clothing and jewellery to be worn. Ensure no loose clothing or PPE in proximity of this equipment when in operation. | 2 | 2 | 4 | * Correct PPE must be worn. * Briefings given to students on correct PPE that must be worn. * All Guards must be in place. |
| 3 | Molten Plastic can cause severe thermal burns. | Staff/Students | * The correct PPE to be worn when operating and handling the 3d printer. | 3 | 3 | 9 | * Users will be reminded to wash their hands after touching the plastic. |
| 4 | Some individuals with respiratory imperilment may be effected by the processing fumes. | Staff/Students | * Open windows and use local ventilation to control fumes. * Use safety glasses fitted with side panels to limit contact with eyes. | 4 | 3 | 12 | * Move out of the environment if you feel unwell and seek medical advice. |
| 5 | Fire, staff could suffer fatal injuries from smoke inhalation/burns. | Staff/Students | * University carries out a fire risk assessment and identifies necessary action. * Fire Alarms fitted in the room. | 5 | 2 | 10 | * Fire Extinguishers are provided near to the machinery in the event of a fire. |
| 6 | Excessive Heat above 350 Degrees C can cause dense toxic smoke. | Staff/Students | * The machines are pre-set so that they do not get near 350 Degrees C. In the event that they do users will be reminded that they need to evacuate the room immediately. | 2 | 5 | 10 | * The reels are housed in a dry safe location away from any source of heat. |
| 7 | Manual Handling may suffer musculoskeletal disorders from handling bulky objects | Staff/Students | * A manual handling assessment must be made if handling heavy parts. * Training is provided on the safe manual handling of parts. | 3 | 2 | 6 | * Staff must attend manual handling courses, Students receive instruction on safe manual handling. Heavy duty gloves to be worn |
| 8 | Users could get electrical shocks or burns from using faulty electrical equipment or from faulty installations | Staff/Students | * Residual current devices are built into the power supply to the workshop. * Staff check and report any defects. | 4 | 2 | 8 | * No personal equipment to be used in the workshop. |

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| 9 | Users could get Chemical Burn from bath to dissolve support material | Staff/Students | * Gloves and Googles must be worn at all times when using the bath. * In the event of contact eyes and skin must be flushed Immediately. If problem continues get medical assistance | 4 | 3 | 12 | * PPE must be worn at all times. * Only fully trained staff to use the bath. * Young people (under 18) not to use the bath under any circumstances. |

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| Assessor signature: | Print name: Gary Barter | **Date: 24th January, 2022** |

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| Risk Assessment Action Plan | | | | | |
| Hazard No. | Action to be taken | By whom | Target date | Review date | Outcome at review date |
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| Responsible manager’s signature:  Print name:  Date: | | | | | Responsible manager’s signature:  Print name:  Date |

Risk Assessment Sign-On Sheet

**Sign on Sheet to acknowledge understanding of Risk Assessment:**

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| **Names and Signatures of other workers/researchers/PG/UG students**  *All others undertaking the process described must signify that they understand the hazards and risks.* | | |
| Print name: | Signature: | Date: |
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