**RISK ASSESSMENT FOR RESEARCH AND PROJECTS**

**COVER SHEET.**

|  |  |
| --- | --- |
| Student’s surname | Tasleem |
| Student’s forenames | Awais |
| Section of School | Science and Engineering |
| Degree | Computer Science |
| Title of Project | Lighting and rendering in the Unity Game Engine |
| Brief description of the project | Understanding how lighting and rendering works in the Unity game engine by making a game that uses these features. |
| Supervisor’s name | Sadaf Hina and Lee Speakman |
| Reserve supervisor in case of absence. | Sadaf Hina and Lee Speakman |
| Locations where work will be carried out | University and my Home |

**It is the responsibility of the PI / Supervisor to ensure the risk assessment is suitable and sufficient and that risk assessments are reviewed should any significant changes to the project / research be made.**

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| --- | --- | --- | --- | --- |
| **Risk assessment (RA) tracking;** | | | | |
| **Hazard** | **RA required** | **RA complete** | **Risk level as identified in RA** | **Authorised as suitable and sufficient by supervisor** |
| Initial Risk Assessment. | ✓ | ✓ | None |  |
| Physical / mechanical / electrical / animal | None |  |  |  |
| Biological – microorganisms | None |  |  |  |
| Chemical | None |  |  |  |
| Radiation | None |  |  |  |
| Travel / Fieldwork | None |  |  |  |
| Host Organisation | None |  |  |  |

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| **I shall be working in the establishment named below (where applicable):** |
|
| Name; Awais Tasleem  Address; 33 Worcester Street, Oldham, OL9 7SE  Tel; 07457186802 |
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| --- | --- | --- |
| **Emergency Contact Details.** | | |
| **Role** | **Name** | **Telephone & email** |
| Student | Awais Tasleem | 07457186802  a.tasleem@edu.salford.ac.uk |
| Academic Supervisor |  |  |
| Host organisation Supervisor (where applicable) |  |  |

Please complete the following risk assessment forms as dictated by the proposed project.

Guidance on how to complete the assessments can be found in the Project RA handbook.

**To save paper please delete the sections that are irrelevant to your project.**

**Initial Risk Assessment.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Identify Hazards which could cause harm: | | | Identify risks = what could go wrong if hazards cause harm: | | | | |
| No. | | Hazard | No. | Risk | | | |
|  | | Physical / mechanical / electrical / animal | No |  | | | |
|  | | Biological | No |  | | | |
|  | | Chemical | No |  | | | |
|  | | Radiation / Lasers | No |  | | | |
|  | | Lone working | No |  | | | |
|  | | Travel / Fieldwork | No |  | | | |
|  | | Disposal of waste material | No |  | | | |
| List groups of people who could be affected: None | | | |  | | What numbers of people are involved? |  |
| What existing precautions are in place to reduce risks? | | | | | | Risk level with existing precautions | |
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| What additional actions are required to ensure precautions are implemented/effective or to reduce the risk further? | | | | | | Risk level with additional precautions | |
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| Is health surveillance required? NO | | | | | If YES, please detail: |  | |
| Who will be responsible for implementing the  precautions: | | | | | | By When: | |

Risk Rating:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Very likely*** | Adequate | Tolerable | Tolerable | Unacceptable | Unacceptable |
| ***Likely*** | Acceptable | Adequate | Tolerable | Tolerable | Unacceptable |
| ***Fairly likely*** | Acceptable | Adequate | Adequate | Tolerable | Tolerable |
| ***Unlikely*** | Acceptable | Acceptable | Adequate | Adequate | Tolerable |
| ***Very unlikely*** | Acceptable | Acceptable | Acceptable | Acceptable | Adequate |
| ***Risk rating*** | ***Insignificant*** | ***Minor*** | ***Moderate*** | ***Major*** | ***Catastrophic*** |

Action following risk rating:

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| --- |
| **Unacceptable** = Stop activity and make immediate improvements/seek further advice |
| **Tolerable** = look to improve within specified timescale |
| **Adequate** = Look to improve at next review |
| **Acceptable** = No further action, but ensure controls are maintained |

Guide to using the risk rating table:

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| --- | --- |
| **Consequences** | **Likelihood** |
| **Insignificant** – no injury | **Very unlikely** – 1 in a million chance of it happening |
| **Minor** – minor injuries | **Unlikely** – 1 in 100,000 chance of it happening |
| **Moderate** – up to three days absence | **Fairly likely** – 1 in 10,000 chance of it happening |
| **Major** – more than three days absence | **Likely** – 1 in 1,000 chance of it happening |
| **Catastrophic** – death or disabling | **Very likely** – 1 in 100 chance of it happening |

**Physical / Mechanical / Electrical / Biological (Animals) Risk Assessment.**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Identify Hazards which could cause harm: | | | Identify risks = what could go wrong if hazards cause harm: | | | | | |
| No. | | Hazard | No. | Risk | | | | |
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|  | |  |  |  | | | | |
| List groups of people who could be affected: | | |  | | | What numbers of people are involved? | |  |
| What existing precautions are in place to reduce risks? | | | | | | | Risk level with existing precautions | |
| No. |  | | | | | |  | |
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|  |  | | | | | |  | |
| What additional actions are required to ensure precautions are implemented/effective or to reduce the risk further? | | | | | | | Risk level with additional precautions | |
| No. |  | | | | | |  | |
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| Is health surveillance required? YES/NO | | | | | If YES, please detail: | | | |
| Who will be responsible for implementing  precautions: | | | | | | | By When: | |

**COSHH (Chemical) assessment**

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| --- | --- | --- | --- | --- |
| **Safety Data Sheets (**[**SDS**](http://www.sigmaaldrich.com/safety-center.html)**) available:** | YES / NO | **You should use the SDS to check what hazards the chemicals you are using create when you interact with them. You should then base your control measures on how you mitigate the likelihood of these interactions causing you or others harm.** | | |
| **List groups of people who could be affected:** | Staff / Students / Visitors / Public | | **How many people could be affected?** |  |
| **What equipment and processes will be involved?** |  | | | |
| **What hazard symbols are relevant to the chemicals you will be using?** | http://www.conceptdraw.com/solution-park/resource/images/solutions/engineering-hazardpic/Engineering-HAZARDPIC-Design-Elements-GHS-Hazard-Pictograms.pnghttp://www.conceptdraw.com/solution-park/resource/images/solutions/engineering-hazardpic/Engineering-HAZARDPIC-Design-Elements-GHS-Hazard-Pictograms.pnghttp://www.conceptdraw.com/solution-park/resource/images/solutions/engineering-hazardpic/Engineering-HAZARDPIC-Design-Elements-GHS-Hazard-Pictograms.pnghttp://www.conceptdraw.com/solution-park/resource/images/solutions/engineering-hazardpic/Engineering-HAZARDPIC-Design-Elements-GHS-Hazard-Pictograms.pnghttp://www.conceptdraw.com/solution-park/resource/images/solutions/engineering-hazardpic/Engineering-HAZARDPIC-Design-Elements-GHS-Hazard-Pictograms.pnghttp://www.conceptdraw.com/solution-park/resource/images/solutions/engineering-hazardpic/Engineering-HAZARDPIC-Design-Elements-GHS-Hazard-Pictograms.pnghttp://www.conceptdraw.com/solution-park/resource/images/solutions/engineering-hazardpic/Engineering-HAZARDPIC-Design-Elements-GHS-Hazard-Pictograms.pnghttp://www.conceptdraw.com/solution-park/resource/images/solutions/engineering-hazardpic/Engineering-HAZARDPIC-Design-Elements-GHS-Hazard-Pictograms.pnghttp://www.conceptdraw.com/solution-park/resource/images/solutions/engineering-hazardpic/Engineering-HAZARDPIC-Design-Elements-GHS-Hazard-Pictograms.png | | | |

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| **Fire and explosion risk;** NO  (If yes complete a separate DSEAR risk assessment) | | | Choose an item. Choose an item. Choose an item. | | | |
|  | **Chemicals / Chemical products of reactions** | **CAS numbers** | **Quantity to be used** | **Hazard Statements**  **Physical** | **Hazard Statements**  **Health** | **WEL (**[**EH40**](https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjv1Za0mZjXAhWBtxoKHVWwC7AQFggmMAA&url=http%3A%2F%2Fwww.hse.gov.uk%2FpUbns%2Fpriced%2Feh40.pdf&usg=AOvVaw0VypKj6DgXJhQtnD20HXx_)**)**  **(Workplace Exposure Limit)** |
| 1 |  |  |  | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. |  |
| 2 |  |  |  | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. |  |
| 3 |  |  |  | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. |  |

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| 4 |  |  |  | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. |  |
| 5 |  |  |  | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. |  |
| 6 |  |  |  | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. |  |
| 7 |  |  |  | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. |  |

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| --- | --- | --- | --- | --- | --- | --- |
|  | **Chemical products of reactions / waste** | **CAS numbers** | **Quantity** | **Hazard Statements**  **Physical** | **Hazard Statements**  **Health** | **WEL (**[**EH40**](https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjv1Za0mZjXAhWBtxoKHVWwC7AQFggmMAA&url=http%3A%2F%2Fwww.hse.gov.uk%2FpUbns%2Fpriced%2Feh40.pdf&usg=AOvVaw0VypKj6DgXJhQtnD20HXx_)**)**  **(Workplace Exposure Limit)** |
| 1 |  |  |  | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. |  |
| 2 |  |  |  | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. |  |
| 3 |  |  |  | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. |  |

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| 4 |  |  |  | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. |  |
| 5 |  |  |  | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. |  |
| 6 |  |  |  | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. |  |
| 7 |  |  |  | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. | Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item.  Choose an item. |  |

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| No | Risk – how will your work with the chemicals create a hazardous interaction with them? | | | Risk Controls – What measures will you use to control these risks? | Risk level |
| 1 |  | | |  |  |
| 2 |  | | |  |  |
| 3 |  | | |  |  |
| 4 |  | | |  |  |
| 5 |  | | |  |  |
| 6 |  | | |  |  |
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| 8 |  | | |  |  |
| 9 |  | | |  |  |
| 10 |  | | |  |  |
|  | | | | | |
| If your risk level is ‘Tolerable’ or ‘Unacceptable’ you need to reduce it with further control measures. | | | | | Risk level with additional risk controls |
| No. | |  | | |
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| **Who will be responsible for implementing risk controls:** | | |  | | |
| **Annual review (date of):** | | |  | | |

**COSHH (Biological) assessment**

**Note; If your project includes the use of genetically modified organisms then a separate GMO Risk Assessment must be completed and approved by the GMO Committee (GMOC).**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Name of organism:** | |  | | **Hazard Group (ACDP\*):** | 2 / 3 / 4 | | **GMO status:** | 1 / 2 / 3 / 4 | |
| **Possible transmission route:** | | Inhalation / ingestion / vector / broken skin / needlestick (sharps) / mucus membrane | | **List groups of people who could be affected:** | Staff / Students / Visitors / Public / Environment | | **How many people could be affected?** |  | |
|  | | | | | | | | | |
| No | Hazard | | Risk | | | Risk control | | | Risk level |
| 1 |  | |  | | |  | | |  |
| 2 |  | |  | | |  | | |  |
| 3 |  | |  | | |  | | |  |
| 4 |  | |  | | |  | | |  |
| 5 |  | |  | | |  | | |  |
| 6 |  | |  | | |  | | |  |
| 7 |  | |  | | |  | | |  |
| 8 |  | |  | | |  | | |  |
| 9 |  | |  | | |  | | |  |
| 10 |  | |  | | |  | | |  |
| \* Check this in the [Approved List of Dangerous Pathogens](http://www.hse.gov.uk/pubns/misc208.pdf) | | | | | | | | | |

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| **What additional actions are required to ensure risk controls are implemented / effective or to reduce the risk further?** | | | Risk level with additional risk controls |
| No. |  | |
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| **Is health surveillance required?** YES / NO | | If YES, please detail: | |
| **Who will be responsible for implementing risk controls:** | |  | |
| **Annual review (date of):** | |  | |

**DSEAR Risk Assessment.**

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| **Products / chemicals / process name:** | |  | | | | | | |
| **DSEAR Zone type**  **(see definitions below)** | | **Gasses / mists / Vapours** | | | **Dusts** | | | |
| **Zone 0** | **Zone 1** | **Zone 2** | **Zone 20** | **Zone 21** | **Zone 22** | |
| **List groups of people who could be affected:** | | Staff / Students / Visitors / Public | | | **How many people could be affected?** |  |  | |
|  | | | | | | | | |
| No | Hazard | | Risk | | Risk Control | | | Risk level |
| 1 |  | |  | |  | | |  |
| 2 |  | |  | |  | | |  |
| 3 |  | |  | |  | | |  |
| 4 |  | |  | |  | | |  |
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| **What additional actions are required to ensure risk controls are implemented / effective or to reduce the risk further?** | | | **Risk level with additional risk controls** |
| **No.** | **Action** | |
|  |  | |  |
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|  |  | |  |
|  |  | |  |
| **Is health surveillance required?** YES / NO | | If YES, please detail: | |
| **Who will be responsible for implementing risk controls:** | |  | |
| **Annual review (date of):** | |  | |