**Portfolio Part One (UFCFJL-30-1)**

**Student Name:**

**Student Number:**

**Guidance: This is the template that MUST be used for portfolio part one. The final version should be exported to pdf format and submitted via Blackboard. Please follow the instructions below and stay within the estimated page guidelines. Quantity does not equal quality or additional marks! You are welcome to adapt this template, including aesthetically, any way you see fit. If you have any questions or accessibility requirements please let the module team know.**

# **Glossary**

* Add each new term you discover throughout the module along with a definition.
* Higher grades will be awarded for students who also include a reference/citation to the location of the definition.
* **Estimated 1-2 pages**

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| Normal | The direction that a face is facing on a mesh, perpendicular to the tangent |
| Subsurface scattering | A graphical technique that approximates light passing through a translucent surface such as hands or leaves |
| UV Unwrapping | The process of folding out a 3D model to allow textures to be applied |
| PBR | Physically Based Rendering is a rendering technique that uses additional textures for effects such as roughness, metalness, and extra normal detail with normal maps |
| High Concept | A short summary of the main design features and ideas of a potential game. |
| Vertex | A single point in the world, with x,y,z coordinates (and extra data for UV mapping). It is used in 3D modelling as they can be connected with edges and faces to create a mesh. |
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# **Task 1: Tools and Techniques**

Choose **three** game engines to compare in the table below. Include the following:

* Pros – Advantages of the engine
* Cons – Disadvantages of the engine
* Appropriate Usage – Situations/projects where this engine would be most appropriate to use

Higher marks will be awarded for students who look beyond materials taught in class.

* **Estimated 1-2 pages**

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| **Game Engine** | **Pros** | **Cons** | **Appropriate Usage** |
| Unity | -Easy to understand the interface and get started  -Many packages and in-built components  -Probuilder tool lets you create map blockouts in engine very quickly  -You can make your own in-editor tools using C# and Unity’s API | -Can have a lot of slowdown when projects get large  -Not many high quality assets on the asset store | -Great for coding experiments, as well as smaller indie games.  -However it is not well suited to large or AAA games as it lacks robustness. |
| Unreal Engine | -Extremely powerful graphics engine, with tools such as nanite and lumen for real-time global illumination.  -Blueprint nodes let you script gameplay without needing to learn a language such as C++  - |  |  |
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