

**ASSESSMENT AND INTERNAL VERIFICATION FRONT SHEET (Individual Criteria)****(Note: This version is to be used for an assignment brief issued to students via Classter)**

Course Title	BA (Hons) in Interactive Digital Media		Lecturer Name & Surname	Adam Cassar			
Unit Number & Title	CA6-05-22 3D Art Foundations						
Assignment Number, Title / Type	Setting the scene						
Date Set	27/02/2025	Deadline Date	26/05/2025				
Student Name		ID Number		Class / Group			

Assessment Criteria	Maximum Mark
KU1 Collect appropriate visual sources to aid in the creation of a 3D model.	10
KU2 Identify methods to optimize the construction of a 3D model.	10
AA1 Manipulate 3D model geometry using appropriate editing tools.	10
AA2 Manipulate the UV maps of 3D model geometry.	10
AA3 Apply correct material properties ensuring visual fidelity of the 3D model.	10
KU3 Review import and export settings for models, materials, and textures in a game engine.	10
AA4 Experiment with procedural shaders in a game engine.	10
SE1 Revise material and shader settings ensuring visual and stylistic fidelity.	10
SE2 Assemble a 3D scene using a variety of generated and predefined 3D models.	10
SE3 Choose correct lighting setup to communicate an appropriate atmosphere.	10
Total Mark	100

Notes to Students:

- This assignment brief has been approved and released by the Internal Verifier through Classter.
- Assessment marks and feedback by the lecturer will be available online via Classter (<http://mcast.classter.com>) following release by the Internal Verifier
- Students submitting their assignment on Moodle/Turnitin will be requested to confirm online the following statements:

Student's declaration prior to handing-in of assignment

- I certify that the work submitted for this assignment is my own and that I have read and understood the respective Plagiarism Policy

Student's declaration on assessment special arrangements

- I certify that adequate support was given to me during the assignment through the Institute and/or the Inclusive Education Unit.
- I declare that I refused the special support offered by the Institute.



Purpose and Aims

3D computer-generated art is a versatile practice which continues to evolve numerous popular sectors. Although its output varies across disciplines, the fundamental basis of 3D art production remains identical across all types of media. This unit aims to introduce the underlying concepts, techniques, and developments in the production of high-quality 3D content for interactive media.

Learners will acquire an understanding of the principles of contemporary 3D modelling by observing and discussing the use of 3D computer-generated art in different types of media. They will be exposed to a first-hand experience of the processes used to build, optimize, and customize 3D models using a variety of industry-appropriate software. Game engines will be used as a platform to showcase 3D work in a real-time interactive format, where learners will understand how to apply their artistic vision to build high-quality computer-generated scenes using a variety of original and predefined assets.



Task 1

In this unit you will be taking ready-made game assets and editing them to be re-purposed as assets for your own custom **diorama**. During this process, you will be modelling, uv mapping and texturing a variety of game assets. The first step you must take is to decide what scene you intend to create, as well as what assets will be needed to create this scene.

You must then present your idea and intention in the form of a visual proposal. This presentation should contain the following information:

- **The genre** of the scene you intend to create.
- **The software** you intend to use.
 - Maya,
 - Blender,
 - Substance Painter,
 - Photoshop,
 - Zbrush
- **A full list of models** that you will need to create the diorama.
 - If you have already obtained some of the models at this stage, you may present them as part of your proposal.
- **Reference images** of any and all models you intend to use.
 - These reference images should focus on what the assets will look like **after** you have edited them.
- **Reference images** that capture the style of scene you intend to create.
- Dioramas that inspired you, **showing your observations on how the artist created a cohesive visual experience**.

Should the diorama you intend to create be based on an artwork you have seen, include the artwork in your proposal and credit it accordingly.

Organise and upload any **material used in your presentation** (**PowerPoint Presentation**, **PureRef files**, **fbx** or **obj** files, etc...) into a **.zip** folder with the naming format **NAME_SURNAME_TASK#** (also **include screenshots** of any reference boards in case images do not load from my end) to the appropriate submission on **Teams**.

Grading Criteria: KU1, KU2

Deadline: 19th March 2025



Task 2

The next step is to begin collecting the models you need to create your completed diorama, **cleaning up topology** and **creating appropriate UV map layouts** where necessary.

For the **topology** of the models, make sure to show knowledge of the following:

- Correct topology
- Avoiding n-gons
- Keeping the polycount relatively low

Then use these following techniques to prepare **appropriate UV map layouts** for your models:

- Automatic/Cylindrical/Spherical/Camera-Based UV Creation Tools,
- Cut,
- Stitch Together,
- Unfold or Unfold Along,

Make sure to cover techniques such as:

- Balancing the amount of UV shells with the amount of compression or stretching (less is better)
- Each object having its own UV space,
- Packing all shells in the 0,1 UV space (using the Layout tool),
- Ensuring all shells have the same texel density (using the Get and Set feature),
- Ensuring all shells are aligned vertically or horizontally (using the Align Tools or Orient to Edges)

Further **general skills** that should also be employed include but are not limited to:

- Organising your scene
- Organising your Outliner

Organise and upload the latest version of your assets as well as **documentation of your process** and a document with links to the original downloadable assets into a **.zip** folder with the naming format **NAME_SURNAME_TASK#** to the appropriate submission on **Teams**.

Grading Criteria: AA1, AA2

Review Date: 7th May 2025 (Feedback will be given and an approximate mark will be established but you will have time to revise and finalize your work before the deadline)

Deadline: 28th May 2025



Task 3

The next step is to **employ texturing techniques**, to **replicate** your chosen models's surface appearance **as close as possible** to the reference, by utilizing the following techniques:

- Downloading textures with the appropriate material, resolution, and context
- Applying proper shaders to the objects
- Linking textures to the material/shader

As you have been creating assets that are meant to be included into a game, the next step is to export the models correctly for use within a game and then test them within the engine.

When exporting, make sure of the following:

- Models are combined,
- Values are frozen and history deleted,
- Pivot point is arranged accordingly,
- Object is positioned at the origin point,
- Exported using .fbx file format

Test them in **Unity** by:

- Importing the .fbx model and the textures
- Set up the materials in Unity
- Organize the models in an aesthetically pleasing manner
- Take a screenshot of the Unity scene

While in **Unity**, designate a minimum of 1 asset and experiment on it using the **Shader Graph**. Using the **Shader Graph** you can create effects such as but not limited to:

- Holograms
- Flowing lava
- Glow
- Outlines
- Dissolve

Organise and upload the latest version of your project and a screenshot of the diorama in Unity along with documentation of your process into a .zip folder with the naming format **NAME_SURNAME_TASK#** to the appropriate submission on **Teams**.

Grading Criteria: AA3, KU3, AA4

Review Date: 21st May 2025 (Feedback will be given and an approximate mark will be established but you will have time to revise and finalize your work before the deadline)

Deadline: 28th May 2025



Task 4

The final step is to iterate once more on all the previous tasks, then compile everything into one single scene with a cohesive visual style. When compiling the scene, ensure that:

- All relevant models are in the scene.
- There is a strong visual and stylistic fidelity.
- The assets are well optimised appropriately for the render pipeline you have chosen.
- Textures and materials are applied correctly to the assets – with UV maps that allow for this to be possible.
- The Shader Graph has been utilised to add to the overall visual experience of your scene.

Once your diorama is complete, prepare a **presentation** to show how you reached the completed artwork from your initial proposal. Your presentation can come in any form as long as it is accompanied with **visuals** that can show your **process** and **outcome**.

Organise and upload the **completed scene file** along with **all material used in your presentation** into a **.zip** folder with the naming format **NAME_SURNAME_TASK#** to the appropriate submission on **Teams**.

Grading Criteria: SE1, SE2, SE3

Deadline: 28th May 2025



Minimum Evidence List

- | | | |
|---|--|--------------------------|
| 1 | T1: Presentation Material .ZIP | <input type="checkbox"/> |
| 2 | T2: Project File .ZIP | <input type="checkbox"/> |
| 3 | T3: Project File .ZIP | <input type="checkbox"/> |
| 4 | T4: Project File + Presentation Material .ZIP | <input type="checkbox"/> |

Print this page and hand in with your assignment on final hand in date.