

# 3D Art Pipeline

## Assessment - Game Art

Student Name

CUAANM313 Create 3D digital models

# Introduction

## **Introduction:**

This assessment will cover the process of planning, designing and creating simple and efficient 3D models, for use in a real-time engine.

The provided brief is designed to collect all the evidence of competency required for this subject. Following an alternative brief and/or presenting additional evidence of competency needs to be negotiated with your trainer. Further information on the assessment process and requirements can be found in the unit's subject and assessment guide.

## **The assessment will include:**

- Basic rigging test.
- Analysing a brief.
- Gathering reference and developing simple concepts.
- Referring to asset lists and using naming conventions.
- Considering and selecting appropriate modelling methods.
- Modelling, UV unwrapping and texturing simple objects.
- Creating PBR texture maps.
- Lighting and presenting your models.
- Gathering and addressing feedback and conducting a post-mortem review.
- Observing and maintaining healthy work practices.

## **The assessment instructions:**

- All sections marked in green must be edited/filled out by each student. Be sure to replace "Student Name" on the first slide and include your name in the document filename.

# Brief | Overview

## Overview:

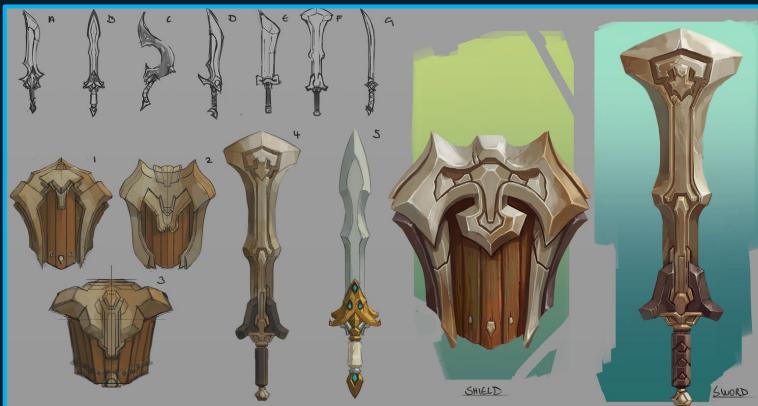
Utilising different modelling methods and techniques create and present a bladed weapon and shield in a real-time engine.

## The scene must contain:

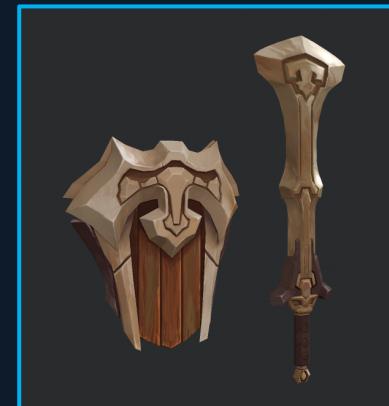
- A bladed weapon of your own design.
- A shield of your own design.

## Technical specifications:

- Refer to asset list.



Sword and shield by Domen Kozelj



# Brief | Requirements

## Modelling:

- Each mesh should not exceed the specified polycount (2000 tris).
- Mesh topology must be clean and efficient.
- Each stage of the project must be approved by your trainer before moving on to the next (Pre-production, Production).
- Appropriate backups must be made throughout production (incremental saves).

## Texturing:

- Each asset must use a single material.
- UV layouts must be clean and efficient.
- Textures must use a non-destructive workflow utilising layers, masks and blend modes where appropriate.
- All textures are to be exported in the resolution specified in the asset list (1024x1024) in .tga format.

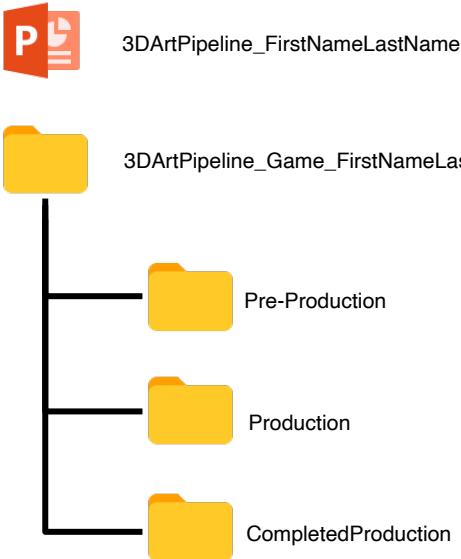
## Presentation:

- The final assets must be uploaded to a single Sketchfab or Marmoset scene and lit appropriately.

# Submission | Guidelines

The following files must be uploaded to Canvas for assessment. Ensure files are in appropriate folders and folders are zipped. All folders and submitted files must adhere to the provided naming conventions. Naming convention is SubjectName\_AssetName\_FirstNameLastName.

Example folder structure is below:



Submit the PowerPoint Workbook for the subject and any associated assessment files using the folder structure shown on this slide.

Within each folder, please submit relevant files:

#### Pre-Production Folder

- Rig test maya scene

#### Production Folder

- Working model and texture source files

#### Completed Production Folder

- Final high quality beauty render saved as a jpg
- Packaged final Marmoset Toolbag scene or sketchfab link

# Examples | Student Work

Below are examples of high-quality submissions from ex-student for inspiration.



[Alice Newhouse](#)



[Kaye Simonson](#)



[Ailish Worton](#)



[Luka Freiherr von Rechenberg](#)



[Harry Sherlock](#)



[Dylan Stuart](#)

# Maintain healthy work practice

# Maintain Healthy Work Practice | WHS

When working in a studio environment it is important to maintain healthy and safe work practices. Before starting the assessment ensure that the following safe work practices are being maintained by evaluating your work environment using the checklist below.

- The workstation is setup ergonomically:**  
An ergonomic workstation requires that the position/height and angle of the monitors, chair, keyboard, mouse and desk can be adjusted to maintain a healthy posture and that there is an appropriate level of lighting in the room.
- Regular breaks have been scheduled:**  
It is important to take regular breaks when working at a computer for any long period of time.
- The work environment is free of hazards:**  
Hazards are potential sources of injury or ill-health which may include mechanical, physical, chemical, psychological and electrical hazards.

Outline the work health and safety requirements that must be considered when working in an office environment.

[Answer here](#)

# Pre-Production

# Pre-Production | Palm Tree Exercise

Insert a screenshot below of the palm tree exercise skinned and deformed



Coconut Tree Trunk 1



Coconut Tree Trunk 2



Coconut Tree Trunk 3

Describe the mesh and topology requirements necessary for optimal deformation.

[Answer here](#)

# Pre-Production | Asset Description

Considering the brief, write a description of each asset below. Include the materials it is made from (wood, metal etc), its condition/age, where it was found, how it got there and any other relevant features.

E.g., A battered shield made of scarred wooden panels with rusty, studded metal banding. There is a large rusty shield boss with a skull motif in the center of the shield. The front of the shield is smattered with barnacles and its loosened panels warped from being half submerged in wet sand. Once owned by a great warrior the shield was washed up on a deserted beach many years ago and has remained undisturbed.

Bladed Weapon:

[Answer here \(~50 words\)](#)

Shield:

[Answer here \(~50 words\)](#)

# Pre-Production I Modelling Methods

For each asset research and describe the modelling method/techniques that will be used to create the mesh (e.g. subdivision, NURBS, polygonal).

Object	Modelling Method/Techniques
Bladed Weapon	<a href="#">Answer here</a>
Shield	<a href="#">Answer here</a>

Describe any intellectual property considerations you should consider when creating any assets.

[Answer here](#)

# Pre-Production | Schedule

With your trainer, negotiate a schedule covering each stage of development and include the milestone dates. Research and list the software required for each stage.

Task	Milestone Date	Software Required
Pre-production	Answer here	Answer here
Modelling & UV's	...	...
Texturing	...	...
Presentation	...	...
Post-production	...	...

# Pre-Production | Asset List

Using consistent naming conventions, modify the asset names, list any additional textures and add relevant notes where required.

<b>Asset</b>	<b>Polycount</b>	<b>Textures</b>	<b>Tex. Size</b>	<b>Texture Name</b>
Bladed Weapon <b>AssetName.fbx</b>	500-1500 Tris	Base Color Metallic Roughness Normal	1024x1024 1024x1024 1024x1024 1024x1024	<b>AssetName_BaseColor.tga</b> <b>AssetName_Metallic.tga</b> <b>AssetName_Roughness.tga</b> <b>AssetName_Normal.tga</b>
Shield <b>AssetName.fbx</b>	500-1500 Tris	Base Color Metallic Roughness Normal	1024x1024 1024x1024 1024x1024 1024x1024	<b>AssetName_BaseColor.tga</b> <b>AssetName_Metallic.tga</b> <b>AssetName_Roughness.tga</b> <b>AssetName_Normal.tga</b>

# Pre-Production | Reference Sheet

Gather reference images and create a reference sheet for your proposed assets, insert the reference sheet below.

# Pre-Production | Thumbnails

Create at least 3 thumbnail images for each asset (sketches or silhouettes). Thumbnails must include the overall form and major details. Each thumbnail should only take 1-2 minutes to complete. Insert the completed thumbnails below and obtain feedback from your peers/trainer.



Bladed Weapon



Shield

# Pre-Production | Primitive Blockouts

Using 3D primitives create a primitive blockout for each of your assets based on the selected thumbnail. Screen capture the blockouts and insert them below.



Bladed Weapon



Shield

# Pre-Production | Concept Feedback

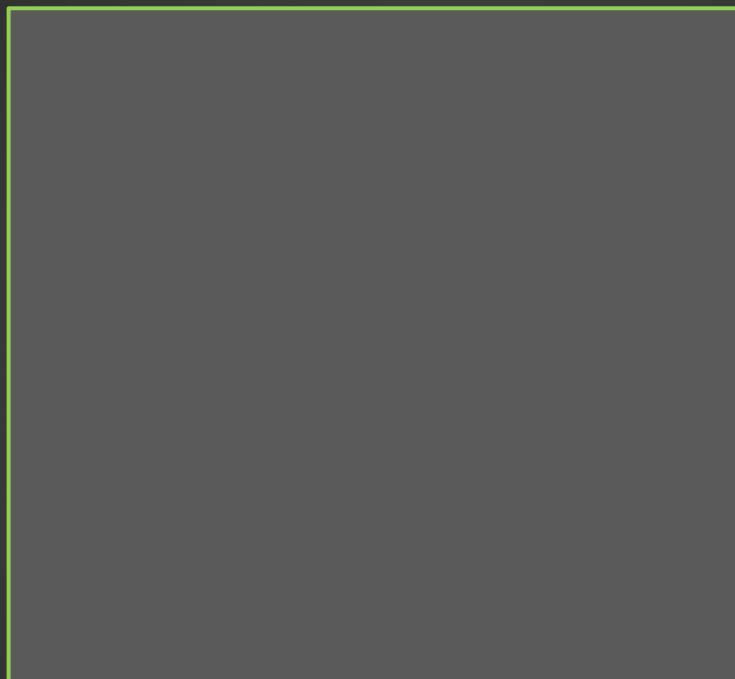
You **Must** gather feedback and obtain approval for pre-production before modelling the assets. Feedback will be given verbally by your trainer, take notes below.

## Feedback

Answer here

# Pre-Production | Concept Approval

Describe how you have addressed the feedback received. Below insert an image of the adjustments made based off feedback.



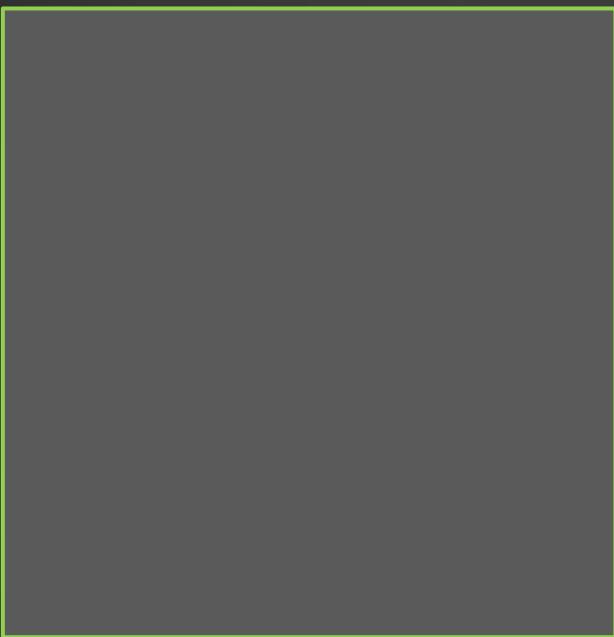
Action Taken Based on Feedback	Approved
Answer here	<input type="checkbox"/>
<input type="checkbox"/> I confirm that the concepts are my own or do not infringe copyright	

Image demonstrating applied feedback

# Production

# Production | Bladed weapon

Create the bladed weapon mesh using the chosen modelling methods, ensuring that the mesh is clean with efficient topology. UV unwrap the mesh, ready for texturing and save a UV snapshot. Screen capture the finished mesh in shaded wireframe and checkered texture mode in Maya and insert the images below.



Perspective Shaded Wireframe



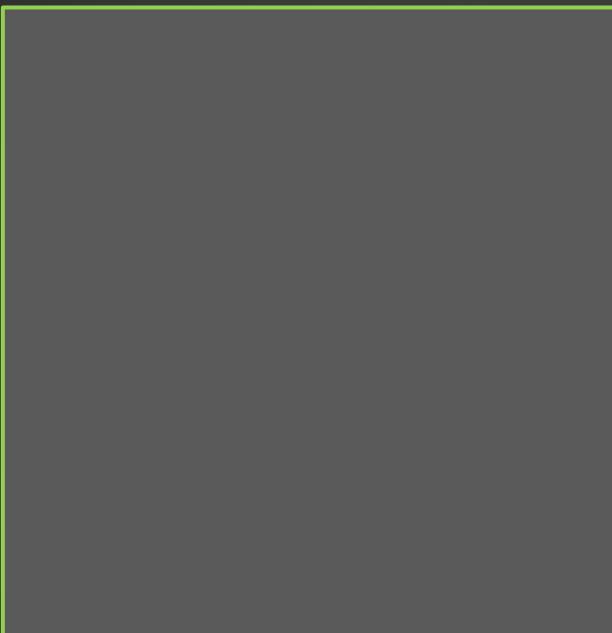
Checkered Texture



UV Unwrap

# Production | Shield

Create the shield mesh using the chosen modelling methods, ensuring that the mesh is clean with efficient topology. UV unwrap the mesh, ready for texturing and save a UV snapshot. Screen capture the finished mesh in shaded wireframe and checkered texture mode in Maya and insert the images below.



Perspective Shaded Wireframe



Checkered Texture



UV Unwrap

# Production | Mesh Clean Up

## Before exporting your asset:

- Check that the mesh scale is accurate.
- Delete history (edit, delete all by type, history).
- Run the cleanup tool and resolve any issues.
- Move the object to the centre/origin of the world space (the grid is the ground).
- Move the pivot to the centre/origin of world space (0 in XYZ).
- Clean-up the outliner and rename the meshes in-line with the asset list.
- Freeze transformations (modify, freeze transformations).
- Save your work and ensure you have a backup.

List two mesh issues and describe why it's important to resolve them.

[Answer here](#)

# Production | Mesh/UV Feedback

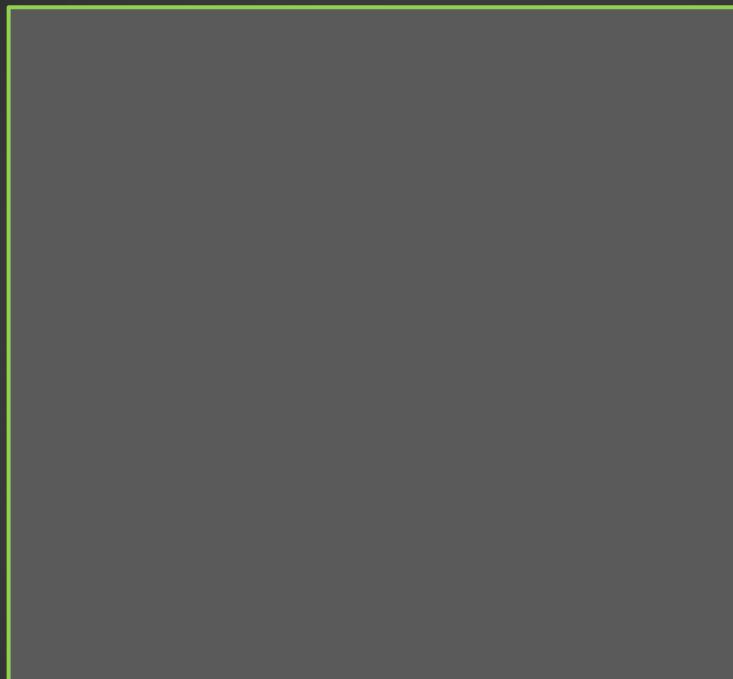
You **Must** gather feedback and obtain approval for the meshes and UV's before texturing the assets. Feedback will be given verbally by your trainer, take notes below.

## Feedback

Answer here

# Production | Mesh/UV Approval

Describe how you have addressed the feedback received. Below insert an image of the adjustments made based off feedback.

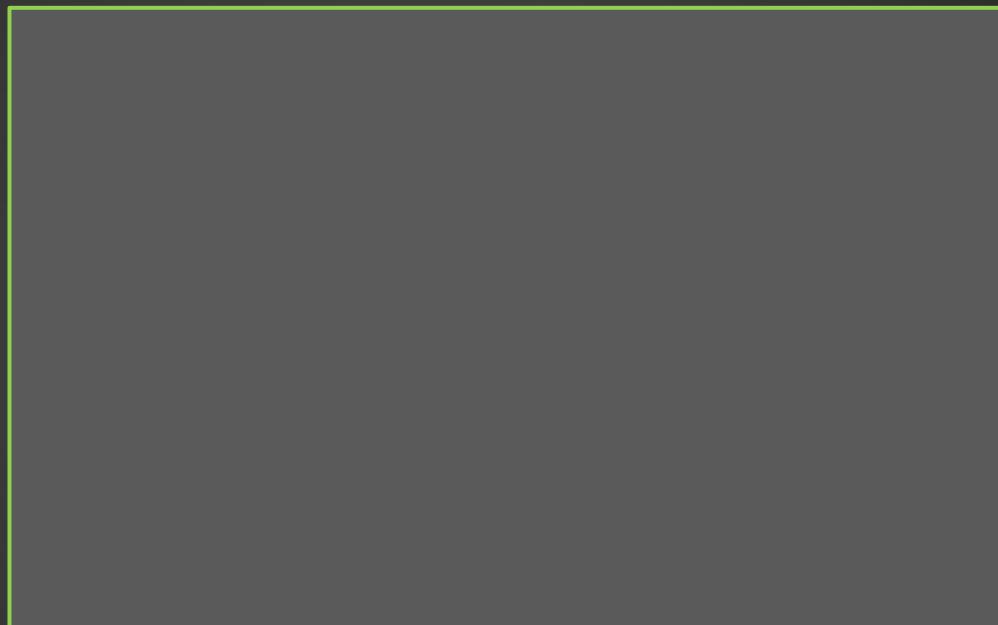


Action Taken Based on Feedback	Approved
Answer here	<input type="checkbox"/>

Image demonstrating applied feedback

# Production | Bladed Weapon Textures

Create the required texture maps for the bladed weapon, utilising a non-destructive workflow. The asset must use a single material, which has been named appropriately. Screen capture the textured asset, export each texture map and insert the images below.



Textured Mesh

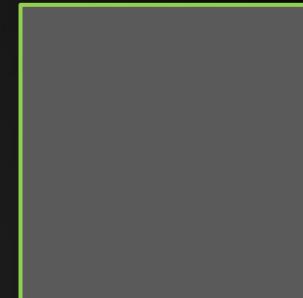
Base Color



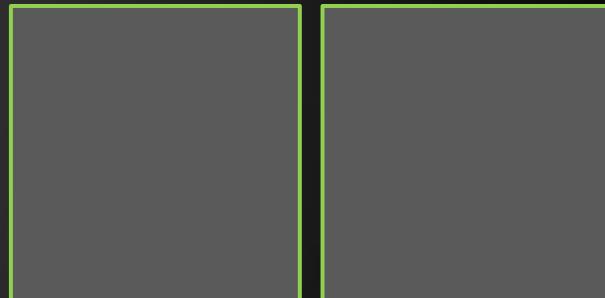
Metallic



Roughness



Normal



# Production | Shield Textures

Create the required texture maps for the shield, utilising a non-destructive workflow. The asset must use a single material, which has been named appropriately. Screen capture the textured asset, export each texture map and insert the images below.

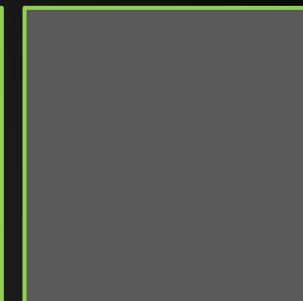


Textured Mesh

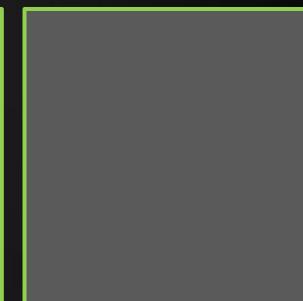
Base Color



Metallic



Roughness



Normal

# Completed Production

# Completed Production | Final Result

Compose both objects into a single scene and present it in a real-time engine. Apply all required textures, light the scene and add any post effects as required. Take a beauty render of the scene and insert the image.



Beauty Render

# Evaluation

# Evaluation | Post-Mortem

Did the assets turn out as you expected? If not, how are they different?

[Answer here \(~25 words\)](#)

What were the most challenging aspects of creating your assets?

[Answer here \(~25 words\)](#)

What aspect of your assets are you most proud of and why?

[Answer here \(~25 words\)](#)

If you were to create the assets again or had more time, what would you change or do differently?

[Answer here \(~25 words\)](#)

What new skills/techniques did you learn during the project?

[Answer here \(~25 words\)](#)