

[Type here]

[Type here]

[Type here]



Professional Graduate Certificate in Education & Training

MODULE CODE: ECPT6007

**ASSESSMENT COMPONENT: Curriculum
Development Project – 3D Character
Creation for Video Games**

STUDENT NAME: Morgan Jones

STUDENT NUMBER: 2210512

Approx. Word Count: 4,069

Use of Generative AI in Assessment

RESEARCH	For this assessment, you can use Generative AI to support you in research, including searching for bibliography, using tools to summarise, compare and interrogate materials.	Yes ☒ No ☐
STRUCTURE	For this assessment, you can use Generative AI to support you in structuring your submission, including creating a draft argument structure, identifying parts and headings, etc.	Yes ☒ No ☐
PROOFREADING	For this assessment, you can use Generative AI to check your own text/creation for grammatical and syntactical mistakes, including rephrasing of your own work within specific standards.	Yes ☒ No ☐
WRITING	For this assessment, you can use Generative AI to create text for submission.	Yes ☐ No ☒
CREATIVE	For this assessment, you can use Generative AI to create creative materials, such as images.	Yes ☐ No ☒
PROGRAMMING	For this assessment, you can use Generative AI to create and check code.	Yes ☐ No ☐
NONE	For this assessment, you are not allowed to use any type of Generative AI support. This includes research support, structure support, writing/proofreading support and creative support.	Yes ☐ No ☒

AI Acknowledgement

Either:

I confirm that I have not used any AI tools in the research and creation of this assignment.

I confirm that I have not presented any AI generated materials as my own work.

I confirm that I have copies of my drafts, notes, and other resources I used, which I may be asked to provide in evidence.

Contents

1.0 Overview and Context of the curriculum	5
2.0 Rationale of the Curriculum	6
3.0 Curriculum Aims and Learning Outcomes.....	8
4.0 Professional Standards.....	9
5.0 Benchmark Statements.....	11
5.1 Subject-specific Skills and Knowledge.....	11
5.2 Critical, Contextual and Professional Knowledge.....	11
5.3 Generic and Graduate Skill.....	11
6.0 Timetable for the Curriculum	12
6.1 Scheme of work.....	12
6.2 Indicative Reading list.....	17
7.0 Assessment Strategy.....	18
7.1 Formative Assessment.....	18
7.2 Summative Assessment.....	18
8.0 Effective Consideration of Skills and Knowledge Development.....	19
9.0 References	21
10.0 Appendices.....	22
10.1 Appendix A: Example Lesson Plan – Character Retopology.....	24
10.2 Appendix B: Example Lesson Plan – Character Rendering for Portfolio.....	28
10.3 Links to relevant documents.....	33

1.0 Overview and context of the curriculum

BA (Hons) Computer Games Design – 3D Character Creation for Video Games

This curriculum has been developed for Level 6 undergraduate students enrolled in the BA (Hons) Computer Games Design programme at the University of Wales Trinity Saint David (UWTSD), with a specific focus on advanced character creation for real-time applications. *The 3D Character Design for Video Games* module is positioned within the final year of study, where students are expected to consolidate prior learning and produce work of a professional standard suitable for inclusion within a portfolio. As such, the curriculum is designed to reflect both academic expectations at Level 6 and the practical requirements of the contemporary video games industry, particularly in relation to current AAA and indie production pipelines.

The module is delivered over an eleven-week period, excluding a designated reading week, and consists of four hours of teaching per week, delivered across two, two-hour sessions. These sessions combine structured lectures, live demonstrations, and practical workshop-based activities, allowing students to engage with both theoretical concepts and applied production workflows. Delivery takes place within a studio-based learning environment equipped with high-spec workstations and supported by access to industry-standard software such as digital sculpting(ZBrush), modelling(Maya), and texturing(Substance 3D Painter), as well as real-time rendering game engines. This environment is intended to replicate a professional studio setting, encouraging students to develop workflows aligned with current industry expectations.

The curriculum is centred around a production-focused workflow, guiding students through the complete character creation pipeline. This includes concept development, base mesh and sculpting, high-resolution detailing, retopology, UV unwrapping, baking, texturing, and final rendering. The structure of the module reflects common practices within professional game development pipelines, ensuring that students gain experience with processes that are directly transferable to industry contexts. In addition, emphasis is placed on optimisation for real-time engines, ensuring that assets are not only visually compelling but also technically efficient.

Students undertaking this module are expected to have prior experience in 3D modelling and digital art, developed through earlier stages of the UWTSD Computer Games Design programme. However, the cohort is likely to demonstrate a range of abilities across both artistic and technical domains. In response, the curriculum incorporates a balance of guided instruction and independent practice, enabling students to progress at an individual pace while working towards a shared set of learning outcomes. Differentiated support is embedded within workshops to ensure that both advanced learners and those requiring additional guidance can achieve progression.

The module also places emphasis on iterative development and critical evaluation, with regular opportunities for formative feedback embedded throughout the timetable. These sessions are designed to simulate professional studio environments, where peer critique, art direction feedback, and ongoing refinement are essential components of the production process. Through this approach, students are encouraged to develop both technical proficiency and the reflective skills required for professional practice. The module ultimately aims to bridge the gap between academic study and industry readiness, preparing students for roles in character art, design, and wider games production pipelines.

2.0 Rationale of the curriculum

The development of this curriculum is informed by the increasing demands of the contemporary video games industry (Ukie, 2025), where character artists are expected to demonstrate both high-level artistic ability and technical proficiency across a full production pipeline. As game development technologies continue to advance, the expectations placed upon graduates entering the industry have expanded significantly, particularly in relation to real-time asset creation, optimisation, and the use of industry-standard tools and workflows.

Within the UWTSD Computer Games Design programme, character creation concepts is introduced at an earlier level in the module *Evolving your creative craft* (UWTSD, 2026); however, character design is not taught as a dedicated, structured component of the module. While students may develop character concepts through 2D illustration tasks, formal instruction in character design methodologies is limited. Furthermore, there is often a lack of advanced, character pipeline-focused modules that fully prepare students for the complexity and expectations of professional practice. This curriculum has been designed to address this gap by providing a structured, end-to-end character creation experience that mirrors industry workflows. By doing so, it supports the transition from academic learning to professional readiness, which is particularly critical at Level 6, where students are expected to produce work of a portfolio standard.

The sequencing of the curriculum is deliberately aligned with established industry pipelines, progressing from concept development and base mesh, through to high-resolution sculpting, retopology, texturing, and final rendering. This structured progression reflects a scaffolded approach to learning, enabling students to build upon foundational skills while gradually engaging with more complex and specialised processes. Such an approach is particularly important within creative and technical disciplines, where the successful execution of later stages is dependent upon the quality of earlier work. For example, effective retopology and texturing are inherently reliant on a well-constructed high-resolution sculpt, reinforcing the need for a logically sequenced curriculum.

The inclusion of dedicated workshop sessions and iterative feedback points throughout the module is also a key component of its design. In professional game development environments, character creation is rarely a linear process; instead, it involves continuous refinement, critique, and iteration. By embedding feedback sessions at strategic points within the curriculum, students are encouraged to adopt a reflective approach to their practice, developing the ability to critically evaluate their own work and respond constructively to external input. This not only enhances the quality of their final output but also fosters essential professional skills such as communication, adaptability, and problem-solving.

Furthermore, the curriculum places a strong emphasis on the use of industry-standard tools and workflows, ensuring that students are developing skills that are directly transferable to employment contexts. Software such as digital sculpting tools (ZBrush), 3D modelling packages (Maya), and real-time rendering engines (Unreal Engine 5) are widely used across the industry, and familiarity with these tools is often a prerequisite for entry-level roles. By integrating these technologies into the curriculum, students are provided with opportunities to develop both technical competence and confidence in their application.

The decision to focus on a complete character creation pipeline, rather than isolated skills or techniques, is also significant. While it is important for students to develop proficiency in individual areas such as sculpting or texturing, the ability to manage and execute an entire workflow is increasingly valued within the industry. This holistic approach enables students to understand how different stages of production interconnect, as well as the constraints and considerations associated with real-time asset creation, including optimisation, performance, and visual fidelity.

In addition to subject-specific skills, the curriculum also supports the development of wider transferable skills that are essential for graduate-level employment. These include time management, as students are required to manage a long-term project across multiple stages; critical thinking, through the evaluation and refinement of their work; and communication skills, developed through participation in critique sessions and the presentation of their final outcomes. Such skills are integral to professional practice and contribute to the overall employability of graduates.

The placement of this module within the final year of study is particularly appropriate, as it allows students to synthesise knowledge and skills acquired throughout their programme. At this stage, learners are expected to demonstrate a high degree of autonomy and self-direction, which is supported by the workshop-based structure of the curriculum. While guidance and support are provided, there is a clear emphasis on independent learning and personal development, reflecting the expectations of both Level 6 study and professional practice.

In summary, this curriculum has been developed to address a clear need for advanced, industry-aligned character creation education within undergraduate games design programmes. Through its structured, pipeline-focused approach, emphasis on iterative development, and integration of industry-standard tools, it aims to equip students with the skills, knowledge, and professional awareness required to successfully transition into the video games industry.

3.0 Curriculum Aims and Learning Outcomes

The aims of this curriculum are to:

- Develop advanced knowledge and practical skills in character creation for real-time video game applications.
- Enable students to apply industry-standard workflows and tools within a complete character production pipeline.
- Support the creation of professional-quality, game-ready character assets suitable for portfolio presentation.
- Foster critical evaluation, reflective practice, and iterative development within a studio-based learning environment.
- Prepare students for employment within the video games industry by aligning learning with current professional standards and practices.

On successful completion of this module, students will be able to:

- Produce a fully realised, game-ready character using industry-standard workflows.
- Apply advanced techniques in digital sculpting, retopology, UV mapping, baking, and texturing.
- Evaluate the effectiveness of character design in relation to technical constraints and visual outcomes.
- Demonstrate knowledge of real-time asset optimisation and performance considerations.
- Critically reflect on their own work, incorporating feedback to refine and improve outcomes.
- Present character work to a professional standard suitable for inclusion in a portfolio.

The programme aims to develop graduates capable of producing professional-quality, game-ready character assets through the application of industry-standard workflows. By integrating creative and technical processes within a structured production pipeline, it bridges the gap between academic study and professional expectations within the video games industry.

The curriculum also emphasises critical evaluation, reflective practice, and independent working, enabling students to refine their project in response to feedback and develop autonomy in their practice. These skills support progression to Level 6 expectations and prepare students for professional environments.

The programme equips students with the technical, creative, and professional skills required for character and environment art roles, while also developing transferable skills such as problem-solving, communication, and project management relevant to the wider creative industries.

4.0 Professional Standards

This curriculum is informed by the *Professional Standards for Further Education Teachers and Work-Based Learning Practitioners in Wales* (Welsh Government, 2023), which provide a framework for effective teaching, learning, and professional practice within post-16 education. The curriculum has been designed to align with these standards by embedding their core principles within both its structure and delivery.

A central focus of the professional standards is the commitment to learners, their progression, and overall well-being. This is embedded within the curriculum through a structured yet flexible workshop-based approach, which allows students to develop at an individual pace while being supported through regular formative feedback. The inclusion of iterative critique sessions and one-to-one guidance ensures that learners are both challenged and supported, enabling the progression from their individual starting points towards professional-level outcomes.

The curriculum also aligns with expectations surrounding inclusive practice and the promotion of equality and diversity. The studio-based learning environment encourages respectful dialogue, constructive feedback, and equal participation, ensuring that all learners are supported regardless of background or ability. The nature of workshop delivery allows for differentiated support, enabling students to engage with the curriculum in a way that reflects their individual strengths and development needs.

In relation to the Welsh language standard, the curriculum supports bilingual delivery through the use of Welsh and English within teaching materials and communication. Learning resources, including presentations and supporting documentation, incorporate Welsh subheadings alongside English to promote visibility of the language within the learning environment. Additionally, the module is delivered by a bilingual lecturer who is able to provide feedback, support, and assessment through the medium of Welsh where required. This ensures that Welsh-speaking students are able to engage fully with the curriculum in their preferred language.

The professional standards also emphasise the importance of maintaining subject knowledge and delivering effective teaching and assessment. This is addressed through the use of industry-standard tools, up-to-date workflows, and demonstration-led teaching, ensuring that content remains relevant to current professional practices. The structured progression of the curriculum, from concept through to final rendered output, reflects a clear and coherent approach to planning and delivery, supporting effective learning across all stages of the module.

Collaboration and professional relationships are embedded through workshop-based learning and peer critique sessions, where students are encouraged to engage with one another's work and provide constructive feedback. This approach reflects professional studio environments and supports the development of communication and interpersonal skills, which are essential for employment within the games industry.

The curriculum also promotes learner autonomy and responsibility through the development of an extended character creation project. Students are required to manage their own workflow, make informed creative and technical decisions, and respond to feedback throughout the process. This aligns with the expectation that learners take an active role in their own development and engage critically with their work.

Finally, reflective practice is integrated throughout the curriculum, both in terms of student learning and teaching delivery. Students are encouraged to evaluate their progress at key stages of the pipeline, while the inclusion of feedback loops supports ongoing refinement and improvement. This reflects the professional expectation that practitioners continually assess and develop their knowledge, skills, and approaches in response to feedback and evolving industry practices.

The curriculum demonstrates clear alignment with the professional standards by embedding principles of effective teaching, inclusivity, collaboration, and reflective practice within its structure and delivery. In doing so, it supports both the development of subject-specific skills and the broader professional behaviours expected within further education and the creative industries.

5.0 Benchmark Statements

This curriculum is informed by industry and academic benchmark frameworks, including guidance from *The Independent Game Developers' Association* (TIGA, 2017) and the *Subject Benchmark Statement for Art and Design provided by the Quality Assurance Agency for Higher Education* (QAA, 2019). These frameworks outline the knowledge, skills, and competencies expected of graduates within game art and creative practice at Level 6. The following statements reflect how these expectations are applied within the context of this module:

5.1 Subject-Specific Skills and Knowledge

Demonstrate advanced 3D character creation skills using industry-standard tools and workflows for real-time applications.

Apply a complete character creation pipeline from concept through to final rendered output.

Generate and develop ideas independently in response to set briefs, progressing them into resolved outcomes.

Apply observation, investigation, and visualisation skills to produce anatomically and structurally coherent characters.

Select and apply appropriate materials, processes, and technologies, demonstrating awareness of quality and optimisation standards.

Demonstrate knowledge of form, proportion, surface detail, and presentation within a real-time context.

Make connections between intention, process, and outcome throughout the production workflow.

Apply technical and artistic problem-solving to meet the requirements of a real-time game asset.

5.2 Critical, Contextual and Professional Knowledge

Demonstrate awareness of current industry practices, tools, and emerging technologies relevant to character creation.

Recognise the relationship between creative work and professional contexts, including audiences, clients, and production environments.

Demonstrate awareness of the work of other practitioners and its relevance to their own practice.

Apply knowledge of intellectual property in the creation and presentation of original work.

5.3 Generic and Graduate Skills

Manage workload effectively, meeting deadlines across an extended production project.

Critically evaluate work and respond constructively to feedback.

Communicate ideas and outcomes through visual presentation and portfolio development.

Research, select, and apply relevant reference material and information to support development.

6.0 Timetable for the curriculum**6.1 Scheme of Work**

Programme Title: BA Computer Games Design – 3D Character Creation for Video Games		Venue: IQ Building Room 203		Lecturer: Morgan Jones	
Hours per week: 4 Hours (2 x 2 Hour sessions)		Day/Time: Tuesday 10AM – 12PM Friday 10AM – 12PM		Number of weeks 11	
Module Aims: • Develop advanced workflows for creating game-ready characters. • Apply industry-standard tools and pipelines to produce high-quality assets. • Critically evaluate and refine character work through feedback and iteration. Module Outcomes: • Produce a fully realised, game-ready character. • Demonstrate proficiency in digital sculpting, modelling, retopology, UV unwrapping and texturing. • Apply professional workflows used in game production pipelines. • Critically reflect on design and technical decisions.					
Week Number	Topic	Aim and Objectives	Teaching and learning activities	Resources required	Assessment
1 – Session 1	•Module overview, assessments and expectations.	•Analyse module structure, expectations and assessment criteria.	•Lecture: Module overview and assessment briefing. •Analysis of industry character examples.	•PCs •Lecture slides •Assessment criteria •Example assets	•Formative: Participation in discussion.

1 – Session 2	•Pipeline & Concepting.	•Evaluate industry-standard character workflow. •Analyse industry standard character creation pipelines. •Generate initial concept ideas.	•Group discussion. •Lecture: Character pipeline. •Concept and idea generation workshop. •Tutor feedback.	•PCs •Lecture slides •Digital Art software •References •Graphics tablets	•Formative: Initial character concepting.
2 – Session 1	•ZBrush recap & Base mesh start.	•Refresh digital sculpting tools and workflow. •Apply sculpting tools to begin creating a base character base mesh.	•Lecture: Character Base mesh •Demonstration of ZBrush tools. •Guided base mesh exercise.	•PCs •ZBrush software •Graphics tablets	•Formative: Base mesh progress.
2 – Session 2	•Base mesh Development.	•Refine proportions and silhouette. •Demonstrate effective use of proportion and scale.	•Lecture: Proportions and silhouette. •Base mesh workshop. •Tutor Feedback	•PCs •Lecture slides •ZBrush software •Graphics tablets	•Formative: Improved Base mesh .
3 – Session 1	•Finalising Base mesh .	•Complete primary forms.	•Workshop refinement •Tutor Critique	•PCs •ZBrush software •Graphics tablets	•Formative: Completed Base mesh .
3 – Session 2	•Hi-Polygon & Hard Surface .	•Introduce secondary forms and hard surface techniques. •Integrate hard surface elements into character design.	•Lecture: Hi-Polygon and Hard surface modelling •Demonstration of ZBrush to Maya hard surface workflow •Hard Surface Workshop	•PCs •Lecture slides •ZBrush software •Maya Software •Graphics tablets	•Formative: Detail progression
4 – Session 1	•Sculpting high frequency details.	•Develop high-resolution detail.	•Lecture: High resolution detail and high polygon modelling.	•PCs •Lecture slides	•Formative: Detail Progression

4 – Session 2	•Refining the character.	•Apply high-poly detailing techniques. •Improve surface quality and consistency.	•Detailing workshop. •Tutor & peer feedback. •Lecture: Character refinement. •Demonstration of tools that can be applied to refine 3D character models. •Refinement Workshop. •Tutor feedback.	•ZBrush software •Graphics tablets •PCs •Lecture slides •Graphics tablets •Maya software •ZBrush software	Formative: Sculpt progression
5 – Session 1	•Workshop & Feedback.	•Critically evaluate work.	•Tutor Feedback. •Character progression workshop. •Peer/Group Critique.	•PCs •Graphics tablets •Maya software •ZBrush software	Formative: Peer and tutor feedback
5 – Session 2	•Character face and head.	•Incorporate facial anatomy and expression.	•Lecture: Character head anatomy, expression & gesture. •Facial Sculpt Demonstration. •Character head workshop.	•PCs •Graphics tablets •Maya software •ZBrush software	Formative: Facial development
6 – Reading Week (No classes)	•N/A	•N/A	•N/A	•N/A	•N/A

7 – Session 1	•Character retopology.	•Understand topology principles, especially for character modelling.	•Lecture: Character retopology. •Demonstration of retopology tools. •Guided practice.	•PCs •Lecture slides •Maya Software •ZBrush Software	•Formative: Retopology start
7- Session 2	•Retopology Development.	•Create clean, optimised topology.	•Retopology workshop. •Tutor feedback. •Recap support.	•PCs •Maya Software	Formative: Retopology progression
8 – Session 1	•UV Unwrapping characters.	•Create efficient UV layouts.	•Lecture: UV Unwrapping characters. •Demonstration on UV Unwrapping a character. •UV Unwrapping Workshop.	•PCs •Lecture slides •Maya software	Formative: UV Layout start
8 – Session 2	•Review & feedback	•Evaluate work and identify improvements with tutor and peer discussion.	•Feedback session •Tutor support •Character creation workshop	•PCs •Maya software •ZBrush software •Graphics tablets	Formative: Character progression reviewed during workshop.
9 – Session 1	•Baking high polygon detail	•Prepare and bake maps	•Lecture: Baking in Adobe Substance 3D Painter •Demonstration on baking in Adobe Substance 3D painter •Baking workshop	•PCs •Lecture slides •Maya software •Adobe Substance 3D Painter software	Formative: High poly details baked cleanly on to low poly character model

9 – Session 2	•Texturing in Adobe Substance 3D painter	•Apply textures and materials to a character model.	•Adobe Substance 3D Painter demonstration •Adobe Substance 3D Painter workshop •Tutor support	•PCs •Adobe Substance 3D Painter software •Graphics tablets	Formative: Texture progress reviewed during workshop.
10 – Session 1	•Character skin & Eyes	•Refine Character textures •Develop realistic materials for use as skin and eyes.	•Adobe Substance 3D Painter material demonstration •Adobe Substance 3D Painter workshop	•PCs •Adobe Substance 3D Painter software •Graphics tablets	Formative: Material quality reviewed during workshop.
10 – Session 2	•Character hair	•Apply hair card techniques to create game-ready hair assets. •Construct stylised or realistic hair using optimised geometry for game engine performance.	•Lecture: Hair card pipelines used in industry/ •Demonstration: Hair card creation workflow. •Hair card workshop	•PCs •Maya software •Adobe Photoshop software	Formative: Haircard base mesh and initial strand layout reviewed during workshop.
11 – Session 1	•Character portfolio rendering	•Produce professional renders.	•Unreal Engine Rendering demonstration •Rendering workshop	•PCs •Unreal Engine	Formative: Render outputs
11 – Session 2	•Review & feedback	•Critically evaluate final work.	•Review and feedback workshop. •Tutor/Peer critique	•PCs •Unreal Engine •ZBrush software •Maya software •Adobe Substance 3D Painter software	Formative: Overall progress reviewed.

6.2 Indicative Reading List

- Anatomy for Sculptors, Understanding the Human Figure by Uldis Zarins and Sandis Kondrats.
- Form of the Head and Neck by Uldis Zarins.
- Anatomy of Facial Expressions by Uldis Zarins.
- ZBrush Character Sculpting: Volume 1 by Rafael Grassetti, Cedric Seaut, et al.
- Sculpting in ZBrush Made Simple: Explore powerful modelling and character creation techniques used for VFX, games and 3D Printing by Lukas Kutschera.
- ZBrush Character Creation: Advanced Digital Sculpting by Scott Spencer.
- ZBrush Creature Design by Scott Spencer.

7.0 Assessment Strategy

The assessment strategy for this curriculum incorporates both formative and summative assessment methods to support student development and measure achievement of the module learning outcomes. This approach reflects the iterative nature of character creation within the video games industry, where continuous feedback and refinement are essential to produce professional-quality outcomes.

7.1 Formative Assessment

Formative assessment is embedded throughout the module to support ongoing progress and development. Regular tutor feedback is provided during workshop sessions at key stages of the production pipeline, including base mesh, sculpting, retopology, and texturing. This ensures that students are able to identify and address technical and artistic issues before progressing to subsequent stages.

Structured critique sessions are also incorporated at strategic points within the curriculum, enabling students to receive targeted feedback on their work. These sessions encourage active engagement and provide opportunities for clarification and refinement. In addition, peer feedback is utilised to support critical evaluation and discussion, allowing students to engage with different perspectives and approaches.

Together, these formative methods promote continuous improvement and reduce the risk of significant issues arising at the point of final submission.

7.2 Summative Assessment

Summative assessment takes place at the end of the module and consists of the production of a fully realised, game-ready character, accompanied by a professional portfolio presentation. This requires students to demonstrate the full character creation pipeline, from concept development through to final rendered output.

The assessment is designed to reflect industry expectations, where character artists are required to present completed assets that demonstrate both technical proficiency and artistic quality. Students are expected to produce work that meets professional standards, with clear evidence of workflow, attention to detail, and appropriate optimisation for real-time applications.

8.0 Effective consideration of skills and knowledge development

The curriculum is designed to support the development of both subject-specific skills and broader knowledge required for character creation within the video games industry.

Through a structured, pipeline-based approach, students engage with a range of technical and creative processes, enabling them to develop a comprehensive understanding of character production for real-time applications.

Subject-specific skills are developed through engagement with industry-standard workflows and software. Students apply techniques in digital sculpting, retopology, UV unwrapping, baking, and texturing, progressing from foundational processes to more advanced applications. This progression ensures that knowledge is not only acquired but applied in context, reinforcing the relationship between technical execution and visual outcome. The integration of real-time rendering tools further supports understanding of optimisation, performance constraints, and asset presentation within game engines.

Knowledge development is supported through the combination of demonstration-led teaching and practical application. Key concepts are introduced through structured sessions and reinforced through workshop-based activities, allowing students to contextualise theoretical understanding within their own work. The sequencing of the curriculum ensures that knowledge builds progressively, with each stage of the pipeline informing the next, supporting a deeper and more connected understanding of the character creation process.

In addition to technical competencies, the curriculum supports the development of wider transferable skills that are essential for graduate-level employment. The extended nature of the character project requires students to manage their time effectively, organise their workflow, and meet set deadlines. Independent working is encouraged through workshop-based delivery, where students are required to take ownership of their progress and make informed decisions regarding their work.

Critical thinking and problem-solving are developed through the iterative nature of the curriculum, where students must evaluate their work, identify issues, and implement solutions. Participation in critique sessions further supports the development of communication skills, as students are required to articulate their ideas, respond to feedback, and engage in constructive discussion.

The curriculum also promotes reflective practice, encouraging students to consider both their process and outcomes throughout the module. By engaging with feedback and refining their work progressively, students develop the ability to assess their own performance and make improvements, which is essential for continued professional development.

Through the integration of technical, creative, and transferable skills, the curriculum ensures that students are not only capable of producing high-quality character assets but are also

equipped with the knowledge and professional competencies required for employment within the games industry and wider creative sectors.

9.0 References

QAA (2019) *Subject Benchmark Statement: Art and Design*. Gloucester: Quality Assurance Agency for Higher Education. Available at: <https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/sbs-art-and-design-17.pdf>

TIGA (2017) *TIGA games course benchmarks*. Available at: <https://tiga.org/education/tiga-games-course-benchmarks>

Ukie (2025) *Ukie key facts 2025*. Available at: https://cms.ukie.org.uk/wp-content/uploads/2025/04/Ukie-key-facts-2025_compressed.pdf

University of Wales Trinity Saint David (2026) *Computer Games Design (Full-time)*. Available at: <https://www.uwtsd.ac.uk/programme-courses/undergraduate/film-media-and-animation/computer-games-design-full-time-full-time>

Welsh Government (2023) *Professional standards for further education teachers, work-based learning practitioners and adult learning practitioners in Wales*. Cardiff: Welsh Government. [online] Available at: <https://hwb.gov.wales/storage/460a740a-7bf1-4c7b-b4ae-348ae380879b/professional-standards-further-education-teachers-work-based-learning-practitioners-wales.pdf>

10.0 Appendices

10.1 Appendix A: Example Lesson Plan – Character Retopology



Lesson Plan

Topic: Character Retopology		Class: Level 6 – BA (Hones) Computer Games Design	
Date: Week 7 – Session 1	Length of lesson: 2 Hours		Number of students: 15
Resources required: •High-spec PCs with Autodesk Maya & ZBrush •Student high poly character sculpts •Pre-made high poly character sculpts •Display board •Lecture notes			
Aim of Lesson To develop students’ ability to create clean, optimised topology for game-ready character models using industry-standard retopology workflows.			
Learning Outcomes – The Learners Should Be Able To: • Apply retopology techniques to convert a high-poly sculpt into a clean, low-poly mesh • Demonstrate effective edge flow, particularly around key deformation areas (face, joints) • Use appropriate tools within Maya to construct efficient topology • Evaluate and refine topology based on animation and performance requirements			

Previous student knowledge required for the session:

- Understanding of high-poly sculpting (ZBrush or equivalent)
- Basic knowledge on in Maya
- Knowledge of the character creation pipeline
- Familiarity with polygon tools (extrude, insert edge loop, etc.)

Anticipated difficulties (if applicable):

- Difficulty understanding correct edge flow for deformation
- Overly dense or inefficient topology
- Struggles with translating high-poly detail into low-poly structure
- Technical issues navigating Maya tools

Professional Standards (where are these being met within the session)**•Commitment to learners, their learning, safety, and well-being**

-Ensuring a safe digital working environment; monitoring students as they use Maya to prevent frustration and errors.

-Supporting learners individually when they encounter difficulties with the bridge tool.

•Value and promote diversity, equality of opportunity, and inclusion

-Allowing students to work at their own pace and explore the bridge tool creatively.

-Encouraging different approaches to modelling, ensuring all learners feel their ideas are valued.

•Understand the importance of the Welsh culture and language

-Appropriately introduce Welsh terminology when applicable.

•Demonstrate dignity, courtesy, and respect towards others

-Encouraging peer feedback during practical work and modelling sessions.

-Modelling professional, respectful behaviour while observing student work.

•Maintain and update knowledge of my subject(s) and how best to teach and assess them

-Demonstrating the latest workflows in Autodesk Maya and explaining multiple techniques for using the bridge tool.

•Know how to use evidence and research to improve my practice

-Incorporating industry-standard modelling techniques and referring to current tutorials, guides, and Maya documentation.

•Plan and deliver effective learning, teaching, and assessment

-Structured demonstration > guided follow-along > independent creative practice ensures clear progression.

•Build positive and collaborative relationships

-Lecturer circulates during practical sessions, offering guidance and encouraging peer discussion.

•**Enable learners to share responsibility for their own learning and assessment**

-Students experiment with the bridge tool independently, creating their own assets and deciding on settings for unique topology.

•**Critically reflect on own values, knowledge, and skills to improve learning**

-Encouraging learners to reflect on their modelling workflow, identify improvements, and try alternative bridge tool settings.

•**Use technology effectively to enhance learning**

-Leveraging Autodesk Maya and digital display tools to deliver clear demonstrations and interactive, hands-on learning experiences.

Lesson Detail:

Stage	Focus	Strategy	Time
Introduction	Register	• Student attendance taken.	5 Minutes
	Overview of retopology	• Brief recap of character pipeline. • Explain purpose of retopology (animation, optimisation). • Show examples of good vs bad topology.	10 Minutes
Development	Demonstration setup	• Introduce tools in Maya (Quad Draw, snapping, symmetry). • Outline workflow students will follow.	10 Minutes
	Live demonstration	• Step-by-step demonstration of retopology on a character head. • Focus on edge loops (eyes, mouth, joints). • Verbal explanation of decisions.	15 Minutes
	Guided Practice	• Students follow along with lecturer. • Lecturer pauses at key stages for clarification. • Immediate support provided.	15 Minutes
	Independent Practice	• Students continue retopology on their own model. • Lecturer circulates, offering one-to-one support. • Encourage experimentation and problem-solving.	50 Minutes
	Review and Reflection	• Group discussion: challenges and solutions. • Show examples of student work (if appropriate). • Reinforce key principles (edge flow, efficiency).	10 Minutes
Plenary/conclusion	Next steps	• Brief link to next stage (UVs / baking). • Set expectations for continued work.	5 Minutes

Assessment Strategies: when and how are they included within the lesson?**Formative assessment throughout:**

- Observation during practical work.
- One-to-one feedback during independent practice.
- Questioning during demonstration to check understanding.

Peer feedback:

- Students discuss topology approaches during workshop.

End-of-session check:

- Review of student progress against key criteria (edge flow, cleanliness, optimisation).

10.2 Appendix B: Example Lesson Plan – Character Rendering for Portfolio

Lesson Plan

Topic: Character Rendering in Unreal Engine 5		Class: Level 6 – BA (Hons) Computer games design
Date: 09/01/2026	Length of lesson: 2 Hours	Number of students: 15
Resources required: •Computer with Unreal Engine 5 software for each student •Computer for lecturer •Display screens •PowerPoint presentation •"ShowreelBackdrop.fbx" file uploaded to Moodle		
Aim of Lesson The aim of this lesson is to introduce students to creating a professional-quality showreel scene in Unreal Engine 5 for portfolio use. Students will learn how to import assets, set up a level, apply industry-standard lighting techniques, configure cameras, and render high-quality outputs suitable for showcasing 3D models.		

Learning Outcomes – The Learners Should Be Able To:

- Import 3D assets into Unreal Engine 5.
- Create and configure a new level suitable for portfolio presentation.
- Set up basic and advanced lighting (Key, Fill, Rim, and God lighting).
- Configure cameras for optimal framing and presentation of assets.
- Use the Level Sequencer to animate asset rotation.
- Render a 4K image or video suitable for use in a professional portfolio.
- Understand how the created level can be reused for future projects by swapping assets and adjusting lighting.

Previous student knowledge required for the session:

- Basic knowledge of Unreal Engine 5.
- Familiarity with camera movement and UI navigation within Unreal Engine.

Anticipated difficulties (if applicable):

- Shader compilation and long loading times when creating a new Unreal Engine project
- Different Unreal Engine versions installed across student PCs, leading to UI differences

Professional Standards (where are these being met within the session)**•Commitment to learners, their learning, safety, and well-being**

-Ensuring a safe digital working environment; monitoring students as they use Maya to prevent frustration and errors.

-Supporting learners individually when they encounter difficulties with the bridge tool.

•Value and promote diversity, equality of opportunity, and inclusion

-Allowing students to work at their own pace and explore the bridge tool creatively.

-Encouraging different approaches to modelling, ensuring all learners feel their ideas are valued.

•Understand the importance of the Welsh culture and language

-Appropriately introduce Welsh terminology when applicable.

•Demonstrate dignity, courtesy, and respect towards others

-Encouraging peer feedback during practical work and modelling sessions.

-Modelling professional, respectful behaviour while observing student work.

•Maintain and update knowledge of my subject(s) and how best to teach and assess them

-Demonstrating the latest workflows in Autodesk Maya and explaining multiple techniques for using the bridge tool.

•Know how to use evidence and research to improve my practice

-Incorporating industry-standard modelling techniques and referring to current tutorials, guides, and Maya documentation.

•Plan and deliver effective learning, teaching, and assessment

-Structured demonstration > guided follow-along > independent creative practice ensures clear progression.

•Build positive and collaborative relationships

Lesson Detail:

Stage	Focus	Strategy	Time
Introduction	-Register	-Register taken at the start of the session.	5 Minutes
Development	-Downloading appropriate files from Moodle	-Verbal explanation of lesson objectives -Demonstration of where to locate and download files on Moodle.	20 Minutes
	-Setting up the UE5 Project	-Live demonstration of creating a new Unreal Engine 5 project. -Explanation of project settings (ray tracing, quality settings). -Students follow along on their own PCs.	20 minutes
	-Basic Lighting	-Tutor-led demonstration of lighting principles -Explanation of main light, fill light, rim light and god light. -Student place a main light in their scene.	15 minutes
	-Camera setup	-Demonstration of camera placement. -Guidance on framing assets for portfolio presentation. -Students experiment with camera settings and positioning.	20 minutes
			20 minutes

Plenary/conclusion	-Advanced lighting	-Further explanation and demonstration of main light, fill light, rim light and god light. -Discussion of mood, readability and visual appeal in portfolio renders. -Students refine lighting in their scenes.	10 minutes
	-Rendering	-Demonstration of level sequencer. -Showing how to animated asset rotation. -explanation of render settings and exporting in 4k quality. -Students render a short clip or image.	
	-Review and Reflection	-Recap key concepts covered. -Group discussion on how this setup can be reused for future projects. -Students encouraged to reflect on lighting and presentation choices.	10 minutes

Assessment Strategies: when and how are they included within the lesson?

Formative assessment throughout the session via:

- Observation of students following demonstrations.
- Questioning students during practical tasks to assess understanding.
- Providing verbal feedback during lighting, camera setup, and rendering stages.

Practical outcome assessment:

- Completion of a functional Unreal Engine level suitable for portfolio use.
- Successful render of a high-quality image or video.

Peer and self-assessment:

- Students briefly review each other's scenes during the plenary to discuss lighting, composition, and presentation quality.

10.3 Links to relevant documents

The Quality Assurance Agency: <https://www.qaa.ac.uk/the-quality-code/2024>

The Quality Assurance Agency – Art and Design: <https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/sbs-art-and-design-17.pdf>

The Independent Game Developers' Association: <https://tiga.org/education/tiga-games-course-benchmarks>

The University of Wales Trinity Saint David – Computer Games Design Course:
<https://www.uwtsd.ac.uk/programme-courses/undergraduate/film-media-and-animation/computer-games-design-full-time-full-time>