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Refer to guidance notes for completion of each section of the specification.

Module Code:	COM557

Module Title:	Digital Sculpting for Game Engines

Level:	5	Credit Value:	20

Cost Centre(s):	GACP	JACS3 code: HECoS code:	I630 101019

Faculty	FAST	Module Leader:	Jack Harker

Scheduled learning and teaching hours	36 hrs
Placement tutor support	0 hrs
Supervised learning eg practical classes, workshops	0 hrs
Project supervision (level 6 projects and dissertation modules only)	0 hrs
Total contact hours	**36** hrs
Placement / work based learning	
Guided independent study	164 hrs
Module duration (total hours)	200 hrs

Programme(s) in which to be offered (not including exit awards)	Core	Option
BA (Hons) Game Art	✓	
BA (Hons) Game Art (with Industrial Placement)	✓	

Pre-requisites
None

Office use only	
Initial approval: 15/06/2020	Version no:1
With effect from: 01/09/2020	
Date and details of revision:	Version no:

Template updated: September 2019

Module Aims
This module is designed to expand student skills and abilities using 3D sculpting tools and techniques. Students will build on prior knowledge of 3D sculpting workflows and software to improve their assets to be fully utilised within a game engine. This process will require the appropriate topologies and surface rendering techniques used within the games industry.

Module Learning Outcomes - at the end of this module, students will be able to	
1	Demonstrate industry standard practice for 3D sculpting.
2	Analyse 3D sculpting workflows to identify efficient strategies for practice.
3	Compare Industry standard techniques to deliver organic 3D Geometry within a game engine.
4	Utilise Industry standard techniques to represent organic 3D geometry with appropriate surface rendering technology.

Employability Skills The Wrexham Glyndŵr Graduate	I = included in module content A = included in module assessment N/A = not applicable
CORE ATTRIBUTES	
Engaged	**A**
Creative	**I/A**
Enterprising	**I/A**
Ethical	**N/A**
KEY ATTITUDES	
Commitment	**A**
Curiosity	**A**
Resilient	**A**
Confidence	**I/A**
Adaptability	**I/A**
PRACTICAL SKILLSETS	
Digital fluency	**I/A**
Organisation	**I/A**
Leadership and team working	**N/A**
Critical thinking	**I/A**
Emotional intelligence	**A**
Communication	**I/A**

Derogations
N/A

Assessment:

Indicative Assessment Tasks:

Coursework will take place throughout this module as a single or multiple creative workflows. Students will be required to initially design organic components, then progress through this workflow to build, sculpt and texture their components.

Assessment will occur at each of these milestones to ensure that students get the relevant feedback as the module progresses. This assessment will be largely based on the relevant concepts, skills and design solutions required to meet that milestone.

On completion, the students will be required to engage in a reflective showcase of their work. Indicative word count is 4000 words.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	1,2,3,4	Coursework	100%

Learning and Teaching Strategies:

As this module will progress with the project workflow, the strategies will change to best support student achievement. Initially, the module will start with a heavier reliance on didactic elements to ensure that the students get the relevant design concepts early in the process. As the students progress their ideas, this will shift to more tutorial-based sessions with informal support. This will be especially the case when the focusing on the more technological aspects of surface rendering techniques

Syllabus outline:

- Characterisation
- Anatomy
- Autodesk Suite
- Sculpting & Subdivisions
- Painting & Texture Maps
- Physical Based Rendering
- Reflection and Diffusion
- Unreal Implementation

Indicative Bibliography:

Essential reading

McDermott, W (2018). The PBR Guide: A Handbook for Physically Based Rendering. Allegorithmic; 3rd edition.

Mike De la Flor (2010). *Digital sculpting with Mudbox,* Focal Press.

Other indicative reading
Keller, E. (2013). *Maya Visual Effects the Innovator's Guide:* Autodesk Official Press. Salen, K. & Zimmerman, E. (2003). *Rules of Play: Game Design Fundamentals*, The MIT Press. Ingrassia, M. (2009). *Maya for games modelling and texturing techniques with Maya and Mudbox, Focal* Press/Elsevier, Amsterdam; Boston. Derakhshani, D., (2015). *Introducing Autodesk Maya 2016,* SanFrancisco: John Wiley & Sons, Inc. Watkins, A. (2012) *Getting started in 3D with Maya create a project from start to finish: model, texture, rig, animate, and render in Maya Focal Press,* Waltham, MA