

2024 / 25

School of Science and Computing

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TU**

Ollscoil
Teicneolaíochta
an Oirdheiscirt

South East
Technological
University

Module Descriptor

3D Game Assets (Computing and Mathematics)

3D Game Assets (A11483)

Short Title: 3D Game Assets
Department: Computing and Mathematics
Credits: 5

Level: Introductory

Description of Module / Aims

This module serves as an introduction to 3D modelling for game asset designers and comprises an emphasis on the modelling pipeline, from concept to model creation to rigging and skinning, and techniques used for the exporting of 3D models to be used in a game engine.

Programmes

stage/semester/status		
COMP-0645	BSc (Hons) in Applied Computing (WD_KACCM_B)	2 / 4 / E
COMP-0645	BSc (Hons) in Applied Computing (WD_KCOMP_B)	2 / 4 / E
COMP-0645	BSc (Hons) in Computer Science (WD_KCMSC_B)	2 / 4 / E

Indicative Content

- Components of an industry-standard 3D modelling platform
- Polygon, subdivision, and NURB modelling
- Rigging and skinning
- Texture unwrapping and baking
- Techniques for exporting models, textures and collisions

Learning Outcomes

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

1. Identify and navigate the main components and features of an industry standard 3D modelling production platform.
2. Compare various modelling approaches, i.e, polygon, sub-division and NURB-based modelling.
3. Describe the fundamentals of the 3D modelling workflow, from concept to a rigged and skinned model.
4. Construct a textured and rigged game asset in a format ready to be used by a game engine.

Learning and Teaching Methods

- Interactive and open-forum lectures.
- Class discussions and presentations.
- Problem-based learning activities.
- Self-directed learning.

Learning Modes

Learning Type	F/T Hours	P/T Hours
Lecture	12	
Practical	36	
Independent Learning	87	

Assessment Methods

	Weighting	Outcomes Assessed
Continuous Assessment	100%	
In-Class Assessment	20%	1,2
Presentation	30%	3
Project	50%	3,4

Assessment Criteria

<40%: Inability to identify and navigate the main components of a 3D production software platform. Inability to critically evaluate techniques used in the creation and exporting of 3D computer graphics models.

40%–49%: Ability to identify and navigate the main components of a 3D production software platform. Ability to describe key concepts of the 3D modelling pipeline and techniques used for exporting.

50%–59%: Ability to discuss and critically evaluate key concepts of the 3D modelling pipeline and techniques used for exporting.

60%–69%: Be able to solve problems within the framework of the 3D modelling pipeline by experimenting with appropriate skills and tools of the 3D production software.

70%–100%: All the above to an excellent level. Be able to analyse and design solutions to a high standard for a range of problems through the use and modification of appropriate skills and tools of the 3D production software.

Supplementary Material(s)

- Lanier, L. *Advanced Maya Texturing and Lighting*. 3rd ed. New York: Sybex, 2015.
- Palamar, T. *Mastering Autodesk Maya*. New York: Sybex, 2016.

Requested Resources

- Room Type: Computer Lab