

## MODULE DESCRIPTOR

### Module Title

3D Character Animation

|           |           |             |        |
|-----------|-----------|-------------|--------|
| Reference | CM3129    | Version     | 3      |
| Created   | June 2022 | SCQF Level  | SCQF 9 |
| Approved  | May 2019  | SCQF Points | 15     |
| Amended   | July 2022 | ECTS Points | 7.5    |

### Aims of Module

To provide the student with the fundamental principles of animation and to develop and implement these principles into 3D character animation.

### Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Demonstrate research and visual development skills in the context of an animation concept.
- 2 Select and implement a range of key 3D modelling techniques that can be used for character modelling.
- 3 Demonstrate a range of fundamental 3D animation techniques.
- 4 Critically evaluate and report on the development of an animated concept, showcasing a professional approach to organisation.

### Indicative Module Content

Preparation: Pre-production, concept development, scriptwriting, storyboarding & general workflow. 3D Modelling: Topology for animation, organic modelling, edge loops & geometry flow, poly counts, low poly vs. high poly, UV unwrap & texturing. Animation techniques: Rigging systems, skinning, key-frame, pose to pose, inverse kinematics, forward kinematics, motion capture. 3D modelling & animation tools: Use of 3D modelling software & motion capture suite, post-production export & rendering.

### Module Delivery

Key concepts are introduced and illustrated through lectures and directed reading. In the laboratories the students will progress through a sequence of exercises to develop sufficient knowledge of 3D animation & animation techniques to enable them to complete the practical design & implementation.

**Indicative Student Workload**

|  | Full Time | Part Time |
|--|-----------|-----------|
| Contact Hours  | 30        | N/A       |
| Non-Contact Hours  | 120       | N/A       |
| Placement/Work-Based Learning Experience [Notional] Hours                    | N/A       | N/A       |
| TOTAL  | 150       | N/A       |
| <i>Actual Placement hours for professional, statutory or regulatory body</i> |           |           |

**ASSESSMENT PLAN**

If a major/minor model is used and box is ticked, % weightings below are indicative only.

**Component 1**

|              |  |            |      |                    |            |
|--------------|--|------------|------|--------------------|------------|
| Type:        | Coursework   | Weighting: | 100% | Outcomes Assessed: | 1, 2, 3, 4 |
| Description: | This coursework involves the design, development and implementation of a 3D animation concept. |            |      |                    |            |

**MODULE PERFORMANCE DESCRIPTOR****Explanatory Text**

The calculation of the overall grade for this module is based on 100% weighing of C1. An overall minimum grade D is required to pass the module.

| Module Grade | Minimum Requirements to achieve Module Grade:                                  |
|--------------|--|
| <b>A</b>     | The student needs to achieve an A in C1.                                       |
| <b>B</b>     | The student needs to achieve a B in C1.  |
| <b>C</b>     | The student needs to achieve a C in C1.  |
| <b>D</b>     | The student needs to achieve a D in C1.  |
| <b>E</b>     | The student needs to achieve an E in C1.                                       |
| <b>F</b>     | The student needs to achieve an F in C1.                                       |
| <b>NS</b>    | Non-submission of work by published deadline or non-attendance for examination |

**Module Requirements**

|                          |       |
|--------------------------|-------|
| Prerequisites for Module | None. |
| Corequisites for module  | None. |
| Precluded Modules        | None. |

**INDICATIVE BIBLIOGRAPHY**

- 1 WILLIAMS, R., 2009. The Animator's Survival Kit. Expanded Edition.
- 2 Villar, O., 2017. Learning Blender. 2nd ed. Addison-Wesley; 2nd edition (12 April 2017).
- 3 Blain, J., 2019. The Complete Guide To Blender Graphics: Computer Modeling & Animation, Fifth Edition. 5th ed. A K Peters/CRC Press; 5th edition (11 April 2019).
- 4 Baechler, O. and Greer, X., 2020. Blender 3D By Example - Second Edition. 2nd ed. [S.I.]: Packt Publishing.