



**Australian Government**

# **ICTGAM519 Manage technical art and rigging in 3-D animation**

**Release: 1**

## ICTGAM519 Manage technical art and rigging in 3-D animation

### Modification History

| Release   | Comments                                                                                                     |
|-----------|--------------------------------------------------------------------------------------------------------------|
| Release 1 | This version first released with ICT Information and Communications Technology Training Package Version 1.0. |

### Application

This unit describes the skills and knowledge required to design, implement, and manage 3-D animation rigs for objects using structural controls, and construct hierarchies to formulate object geometry, and skeletal rigs to a defined project brief.

It applies to individuals with high-level mathematical, technical and communication skills working as concept artists, game designers, games programmers, animators, and other personnel working in the game development industry.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

### Unit Sector

Game development

### Elements and Performance Criteria

| ELEMENT                                                         | PERFORMANCE CRITERIA                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Elements describe the essential outcomes.</i>                | <i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>                                                                                                                                                       |
| 1. Use reference or source materials to assess rig requirements | 1.1 Use organisational procedures and production documentation to determine model rigging requirements<br>1.2 Maintain a portfolio of reference materials<br>1.3 Determine the range of software features available, when using various rigging technologies |
| 2. Plan rig suitable for animation/movement                     | 2.1 Analyse the inner workings of the object to select appropriate skeletal or structural systems<br>2.2 Analyse required bones or joints behaviours to select correct                                                                                       |

| ELEMENT                                                                             | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                     | <p>orientations</p> <p>2.3 Examine object geometry topologies to select the correct bone and joint placement</p> <p>2.4 Analyse critical object movement to select forward kinematics (FK) or Inverse Kinematics (IK) requirements, or a hybrid solution</p> <p>2.5 Record the results for use at the rigging implementation phase</p>                                                                                                                                                                                         |
| 3. Implement character skeleton requirements                                        | <p>3.1 Use 3-D software to place the bones and joints, according to rigging plan</p> <p>3.2 Use 3-D software to orientate the bones and joints, according to rigging plan</p> <p>3.3 Use 3-D software to construct FK or IK requirements in adherence to the rigging plan</p> <p>3.4 Use 3-D software to construct hierarchies and pivotal sets</p> <p>3.5 Trial and refine rotations and movement attributes</p>                                                                                                              |
| 4. Employ character movement and implement character attributes and control handles | <p>4.1 Use 3-D software to construct specific driven attributes for manipulation purposes</p> <p>4.2 Use 3-D software to create, and place, control handles with the appropriate attributes</p> <p>4.3 Use 3-D software to link control handles to improve the animation procedures</p> <p>4.4 Trial and refine the controls, and attributes</p> <p>4.5 Negotiate modifications, where appropriate</p> <p>4.6 Use 3-D software toolsets to skin/bind object geometry, to created skeletal systems or mechanical structures</p> |
| 5. Test and refine rig integrity                                                    | <p>5.1 Use 3-D software to test and refine, object rig interaction</p> <p>5.2 Use 3-D software toolsets to test and refine, geometry skeleton systems or mechanical structure interaction</p> <p>5.3 Negotiate modifications, where appropriate</p>                                                                                                                                                                                                                                                                            |
| 6. Produce animated sequences of rigged object                                      | <p>6.1 Create 3-D animations of rigged models using animation and rigged modelling techniques, to suit design specifications</p> <p>6.2 Render the completed animated sequences</p> <p>6.3 Save and store the animated sequences, using appropriate output file formats, standard naming conventions, and version-control protocols</p> <p>6.4 Present the 3-D animated sequences of rigged models to the</p>                                                                                                                  |

| ELEMENT | PERFORMANCE CRITERIA                                  |
|---------|-------------------------------------------------------|
|         | relevant personnel for evaluation by agreed deadlines |

## Foundation Skills

*This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.*

| Skill                | Performance Criteria         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reading              | 1.1, 3.1, 3.2, 3.3, 6.1, 6.3 | <ul style="list-style-type: none"> <li>Interprets, analyses and comprehends briefs, documents and conceptual information to inform job requirements</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Writing              | 2.5, 4.5, 5.3, 6.3           | <ul style="list-style-type: none"> <li>Develops readily-understood conceptual and instructional documentation, using programming language</li> <li>Transforms creative ideas for specific audiences, using clear and detailed language</li> </ul>                                                                                                                                                                                                                                                                                                                                                                          |
| Oral Communication   | 1.3, 4.5, 5.3                | <ul style="list-style-type: none"> <li>Speaks clearly and concisely, converting highly technical language and terminology to plain English, when providing information</li> <li>Elicits information using effective listening and open questioning techniques</li> </ul>                                                                                                                                                                                                                                                                                                                                                   |
| Numeracy             | 4.6, 5.1, 5.2                | <ul style="list-style-type: none"> <li>Undertakes geometric calculations to deduce measurements, relationships between points, lines, angles and figures in space by using assumed properties of space</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                          |
| Interact with others | 4.5, 5.3, 6.4                | <ul style="list-style-type: none"> <li>Recognises and applies the protocols governing what to communicate, with whom and how, when presenting work for evaluation, and negotiating modifications</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                |
| Get the work done    | All                          | <ul style="list-style-type: none"> <li>Sequences and schedules complex activities, monitors implementation and manages relevant communication</li> <li>Implements actions as per the plan, making slight adjustments if necessary, and addressing some unexpected issues</li> <li>Makes a range of critical and non- critical decisions in relatively complex situations, taking a range of factors into account when planning, testing and refining rigs</li> <li>Utilises a broad range of features within applications to improve personal productivity, optimising software functions for specific purposes</li> </ul> |

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|  |  | <ul style="list-style-type: none"><li>• Manages and maintains files securely in a variety of storage media and formats</li></ul> |
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## Unit Mapping Information

| Code and title<br>current version                                    | Code and title<br>previous version                                    | Comments                                              | Equivalence status |
|----------------------------------------------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------|--------------------|
| ICTGAM519<br>Manage technical art<br>and rigging in 3-D<br>animation | ICAGAM519A<br>Manage technical art<br>and rigging in 3-D<br>animation | Updated to meet<br>Standards for<br>Training Packages | Equivalent unit    |

## Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>