



Australian Government

ICTGAM545 Manage technical art and rigging in 3-D animations

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 6.0.

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.

The unit applies to those 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. Assess rig requirements	1.1 Determine and document model rigging requirements according to organisational requirements 1.2 Develop portfolio of reference materials according to rigging requirements 1.3 Determine and document range of model rigging software features 1.4 Submit documentation to required personnel and seek and respond to feedback
2. Plan rig	2.1 Analyse inner workings of object and select required skeletal and structural systems 2.2 Analyse bones and joints behaviours and select

ELEMENT	PERFORMANCE CRITERIA
	orientations 2.3 Examine object geometry topologies and select required bone and joint placement 2.4 Analyse critical object movement and select required kinematics and hybrid solution 2.5 Record results for use in rigging implementation phase
3. Implement character skeleton requirements	3.1 Use 3-D software to place and orientate bones and joints according to rigging plan 3.2 Construct FK and IK requirements according to rigging plan 3.3 Construct required hierarchies and pivotal sets 3.4 Trial and refine rotations and movement attributes
4. Employ and implement character attributes and control handles	4.1 Construct specific driven attributes for manipulation purposes 4.2 Create and place control handles with required attributes, link control handles and improve animation procedures 4.3 Trial and refine controls and attributes and negotiate modifications 4.4 Skin and bind object geometry to created skeletal systems and mechanical structures
5. Test and refine rig integrity	5.1 Test and refine, object rig interaction 3 5.2 Test and refine geometry skeleton systems and mechanical structure interaction 5.3 Negotiate modifications with required personnel and action modifications
6. Produce animated sequences	6.1 Create 3-D animations of rigged models according to rigging requirements 6.2 Render completed animated sequences 6.3 Save and store animated sequences and use output file formats, standard naming conventions, and version-control protocols 6.4 Present 3-D animated sequences of rigged models to required personnel for evaluation by agreed deadlines

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Numeracy	Undertakes geometric calculations to deduce measurements, relationships between points, lines, angles and figures in space by using assumed properties of space
Oral communication	Uses listening and questioning techniques and effective mode of communication to articulate complex concepts and present design using industry language for intended audience
Reading	Interprets, analyses and comprehends briefs, documents and conceptual information to inform job requirements
Writing	Transforms creative ideas and develops required documentation for specific audiences, using clear and detailed language
Teamwork	Demonstrates an understanding and applies protocols governing what to communicate, with whom and how, when presenting work for evaluation, and negotiating modifications
Planning and organising	- Sequences and schedules complex activities, monitors implementation and manages communication - Implements actions as per the plan, making slight adjustments if necessary, and addressing some unexpected issues - Manages and maintains files securely in a variety of storage media and formats
Problem solving	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
Self-management	Improves personal productivity and optimises software functions for specific purposes using a broad range of application features

Unit Mapping Information

Supersedes and is equivalent to ICTGAM519 Manage technical art and rigging in 3-D animation.

Links

Companion Volume Implementation Guide is found on VETNet -

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

Assessment Requirements for ICTGAM545 Manage technical art and rigging in 3-D animations

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- design, implement and manage rigs for objects according to production documentation and organisational procedures on at least two occasions.

In the course of the above, the candidate must:

- use and refine skeleton/structural and animation controls for optimal performance
- construct hierarchies to formulate specific controls
- combine and refine object geometry to skeletal/structural rigs
- create 3-D digital animated sequences of a rigged model
- meet production deadlines.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- basic 3-D digital animation methodologies for managing technical art and rigging in 3-D animation
- features of a range of delivery platforms applicable to managing technical art and rigging in 3-D animation
- geometry topology analysis procedure and methodology
- procedures for identifying physical attributes to animate and manage technical art and rigging in 3-D animation
- rigged 3-D modelling techniques
- theory of anatomy and structural systems in relation to 3-D animation techniques.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- computer hardware and software
- games engine
- file storage
- organisational procedures applicable to managing technical art and rigging in 3-D animations.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

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