



Australian Government

ICTGAM514 Design and create models for a 3-D and digital effects environment

Release: 1

ICTGAM514 Design and create models for a 3-D and digital effects environment

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 and create models for a 3-D and digital effects environment using complex topology, specified geometry surfaces, and advanced model builds.

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. Design and plan a 3-D model	1.1 Research and collect a portfolio of reference material 1.2 Present the portfolio of collected reference material 1.3 Use reference material to develop and design a modelling plan
2. Use suitable geometry surface for models	2.1 Research the different types of geometry to select the most suitable for a 3-D model 2.2 Clearly document the selected geometry choice 2.3 Explain, justify and demonstrate the reasons for the selected

ELEMENT	PERFORMANCE CRITERIA
	geometry choice 2.4 Apply the selected geometry choice to 3-D model 2.5 Make changes to the geometry selection where necessary
3. Analyse the resource material to construct and apply a suitable topology	3.1 Construct and test a topology plan using chosen concept development software 3.2 Explain or demonstrate the reason for choosing a particular modelling method 3.3 Assess and refine the topology plan with the client and relevant personnel
4. Construct a 3-D model	4.1 Use a modelling plan to construct the model, in the chosen 3-D modelling and animation software 4.2 Build the model, according to specifications 4.3 Present the near-finished product to the relevant personnel 4.4 Accept feedback to incorporate into the final design 4.5 Assess and refine the model with clients and the relevant personnel 4.6 Compose a report on the experience of working on a 3-D model

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, 1.3, 2.1, 4.1, 4.2	- Interprets, analyses, and comprehends conceptual and specification information to inform job requirements - Organises, evaluates and critiques ideas and information, from a range of complex texts, to determine which geometry and topology will best suit the 3-D model
Writing	1.2, 1.3, 2.2, 2.3, 3.2, 3.3, 4.4, 4.5, 4.6	- Transforms creative ideas into readily-understood information for specific audiences - Develops material about the advantages and limitations of different technologies, using clear language to convey information and requirements

Oral Communication	1.2, 2.3, 3.2, 3.3, 4.4, 4.5	- Elicits information using effective listening and open-questioning techniques - Speaks clearly and concisely, converting highly technical language and terminology to plain English, when providing information
Numeracy	2.2, 2.4, 2.5, 3.1, 4.1, 4.2, 4.4	- Develops mathematical representations of any three-dimensional surface of objects using whole numbers, decimals and percentages when manipulating measurement, scale, ratio, coordinates, colour, shading and other 3-D modelling elements - Interprets numerical data in order to decipher technical charts, diagrams, and other specifications
Get the work done	All	- Sequences and schedules complex activities, monitors implementation and manages relevant communication - Implements actions as per the plan, making slight adjustments if necessary, and addressing some unexpected issues - Makes a range of critical and non-critical decisions in relatively complex situations, taking a range of factors into account - Uses feedback and evaluation of results to inform decisions about future improvement - Utilises a broad range of features within digital applications for specific purposes

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTGAM514 Design and create models for a 3-D and digital effects environment	ICAGAM514A Design and create models for a 3-D and digital effects environment	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for ICTGAM514 Design and create models for a 3-D and digital effects environment

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Performance Evidence

Evidence of the ability to:

- research and build a portfolio of reference material
- prepare a topology plan for a 3-D model design using:
 - appropriate industry terminology
 - appropriate geometry surfaces
 - concept development software
 - feedback from others to refine the plan
- use software to construct an advanced 3-D model according to plan, and use feedback from others to refine the model.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- outline methods of sourcing reference material
- summarise the key aspects of a modelling plan
- discuss geometry surfaces, including:
 - NURBS
 - Sub-D
 - Polygon
 - T-splines
 - explain the digital model development process
 - explain the technology requirements and human resources required to create 3-D models, and their respective skills
 - • explain box, edge-loop and patch modelling

- summarise the capabilities and constraints of 3-D modelling packages
- outline why it is important to schedule each production component
- explain features of topology plans
- discuss the uses of storyboards and scripts.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances must be typical of those experienced in the game development field of work, and include access to:

- computer hardware and software
- games engines
- file storage.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

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